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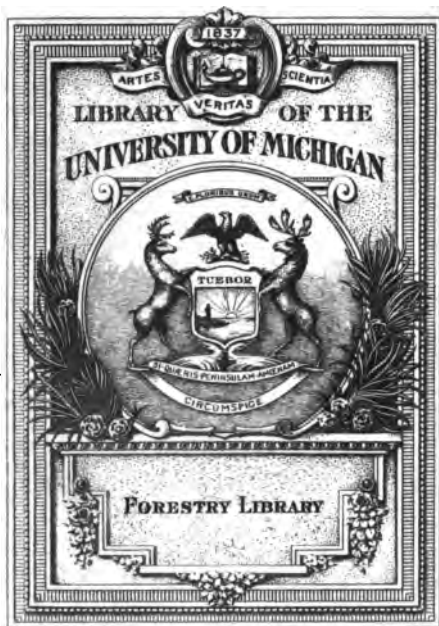
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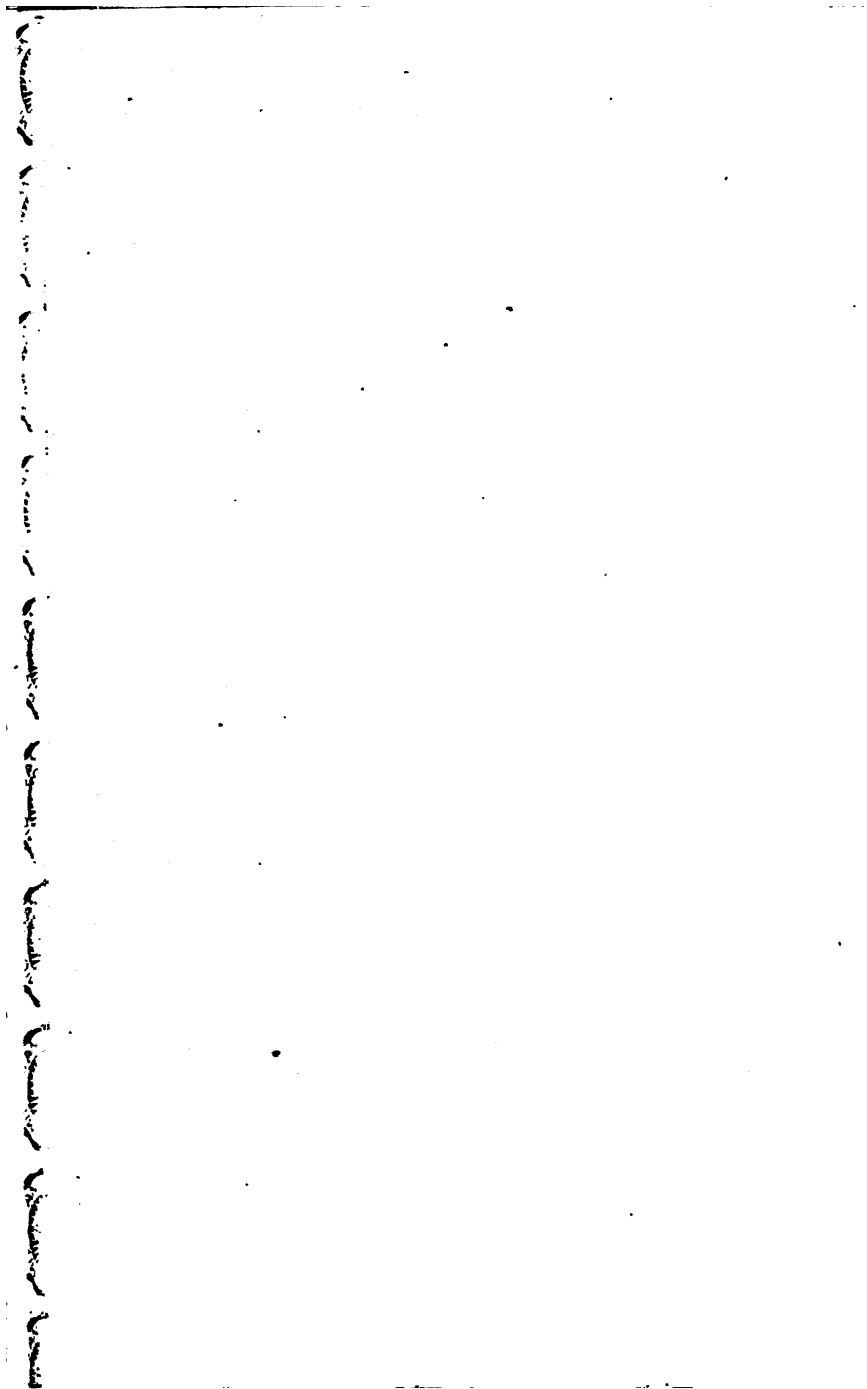
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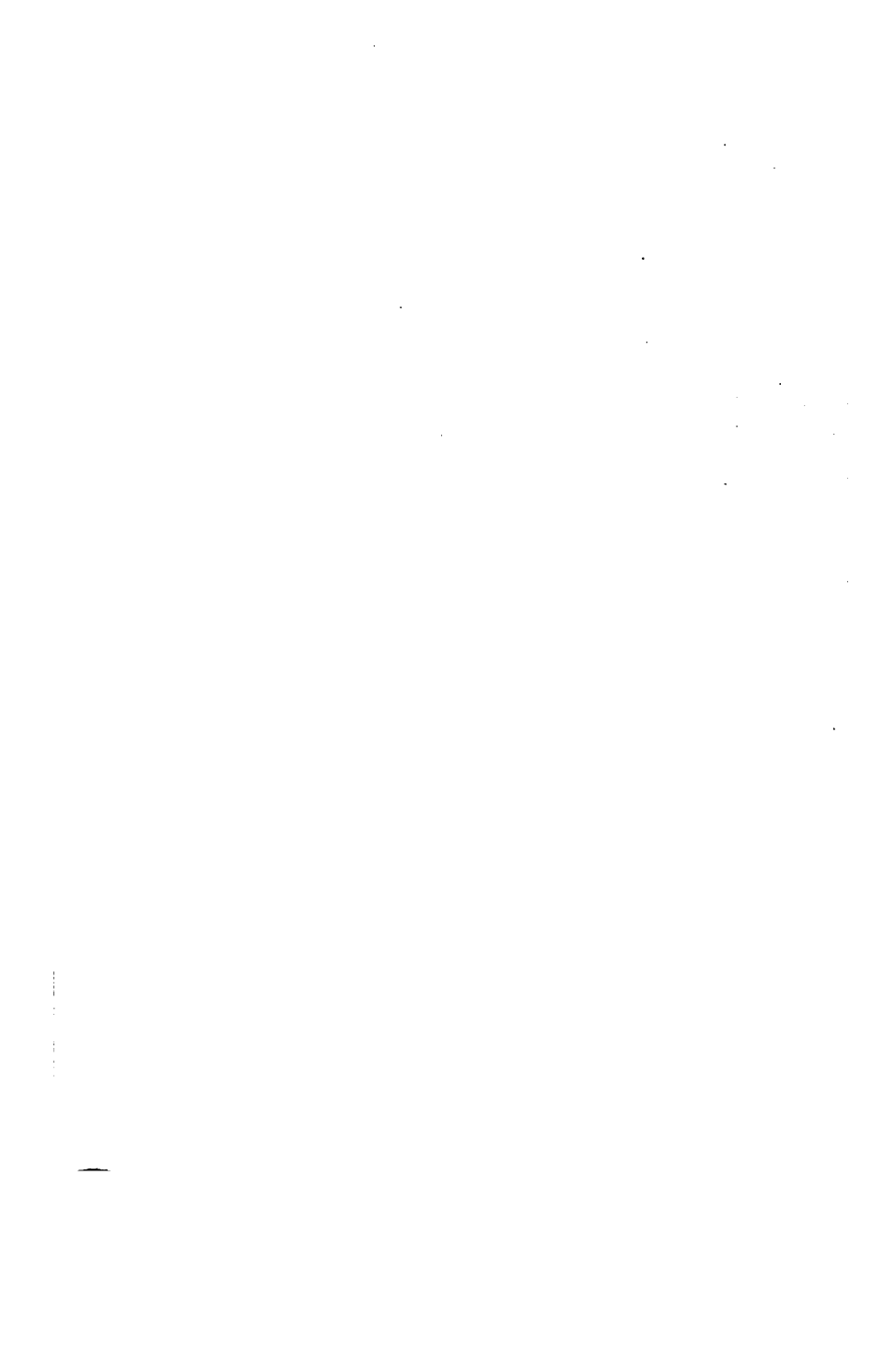
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THE GOOD SHIP EARTH



THE GOOD SHIP EARTH

A Survey of World Problems

By

HERBERT QUICK

Author of

Aladdin & Co., The Broken Lance, etc., etc.

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INTRODUCTION

Of the light-bringing books, one reveals the hidden by cutting us a vista through some jungle of fact. Another bears us to some mount of vision and shows us a panorama. Of the latter sort is this book. The reader feels as if the author stood beside him on some lofty peak, overlooking all the kingdoms of the earth and all the centuries, and, with one hand on the reader's shoulder gently turning him now toward this quarter, now toward that, with the other he swiftly points out the great stirring features of the scene as with vivid kindling speech he interprets them. Many men have mapped and described segments of the panorama Earth and Man, but I know of no one who has been able in a brief space to draw out of it so much meaning for his readers as Mr. Quick.

So often men gifted with imagination are wanting in steady intellectual grasp that it is refreshing to meet with a seer who seizes upon a fundamental truth and consistently holds to it. Usually the great principle of population is recognized only by the conservative. Mr. Quick is unique in being a constructive reformer with faith in continuing social progress, who, nevertheless, perceives the fatal tendency of man to defeat his aspirations by his blind multiplication. I know of no contemporary writer who applies the law of population with equal courage and precision, and to the last implication and the last detail I am in agreement with him.

His eloquent demonstration of the folly of exporting "good government" to the backward peoples and the

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wisdom of evangelizing them by means of devoted missionaries and teachers is one of the golden passages of the book.

At a time when the problems of race mingling and race crossing are befogged by enthusiasts whose amiable sentiments blind them to essential truths, it is well to hearken to a man of broad sympathies, utterly free from the taint of race prejudice, who, nevertheless, presents with the force of a mathematical demonstration the ugly consequences of the untrammelled mixing of dissimilar races.

The author's speculation as to the key-reform that will put humanity in the path of progress is certain to provoke earnest dissent. One group of critics will say: "Your reform is not the pivotal one. To-day it is chiefly capital that captures the surplus, not land. Past aristocracies may have rested on landlordism, but private capitalism is the basis of plutocracy to-day. No taking of ground rents for community benefit can diffuse the ownership of the mines and the mills or end the capitalist's control over the life and well-being of the workers. The recovery of industrial freedom involves the community ownership of the means of production."

From another quarter will come the protest: "Your socializing of land values is merely an economic reform, and nothing very great can hinge on it. More fundamental than the democratizing of wealth, or even the democratizing of welfare, is the democratizing of

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knowledge and high ideals of life. Ignorance, superstition and vice are greater foes of human advancement than the exactions of landlord or capitalist. The universal diffusion of essential knowledge and of right ideals of life is certain to bring in time whatever economic reforms may be necessary. But *they* will not bring *it*. It is, above all, *public education* that sets off Occident from Orient and our time from other times. If only education can be broadened and deepened, the constant adjustments called for by the changing circumstances of society will be made promptly and well."

The socializing of land values, socialism and educationism—these are the most fundamental proposals for the promotion of social progress in the world to-day, and the discussion that rages about them is a veritable battle of the giants. Our author's powerful advocacy of land reform ought to bring into action the most redoubtable champions of the rival reforms.

EDWARD ALSWORTH ROSS.

The University of Wisconsin.



THE GOOD SHIP EARTH

THE GOOD SHIP EARTH

CHAPTER I

WE ARE ALL IN THE SAME BOAT

OFTEN we hear the saying, "We are all in the same boat"; but how seldom do we think of the world-wide, universal, physical sense in which the maxim is true. We are all passengers on the good ship *Earth*, and all history is the record of the relations between human beings as such passengers.

A great air-ship, is the *Earth*, twenty-five thousand miles in girth, covered with water, save where the high spots of the solid crust protrude in patches and spots to the extent of a quarter of her deck room. On those spots, called land, we, the passengers, must, in the main, live. It is the great gift of the Creative Principle to all men.

ON BOARD THE GOOD SHIP EARTH

The good ship *Earth* has no crew. She is like an air-ship, automatically controlled by some force not contained in the vessel guided. She has no rudder, no sails, no motors, no engines. She works herself. The shove into space which set her going is all the impulse she needs; so on, and on, and on she flies in her predestined path, without a crew, laden with passengers.

We know that she moves, just as we know that a railway train moves—by the way in which things beside her path *seem* to move. The stars and planets are to the earth what the farms, towns and buildings are to the train. They show us passengers that our good ship *Earth* is on her way. But we do not know whither she is bound. We are embarked on a vessel that left port cons ago under sealed orders.

Our air-ship is globular, and spins around and around—for the pitcher who hurled her gave her the whirl that means a curve-ball. She holds us to her, so we can not fly off. She draws us, as a magnet draws steel dust, so

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that as she spins from the thumb and finger of God, we stay on. We know that our round ship whirls; just as we know the same thing of a merry-go-round—because we pass the same things regularly—once every twenty-four hours. The things we pass are the sun, moon, planets and stars—our whirling is proven by the identical evidence that proves our forward motion.

Our forward path, too, is a circle—for after three hundred and sixty-five days, we return to the place occupied a twelvemonth ago. This is our trip about the sun, and makes our year. Thus we go spinning like a curved baseball, and behaving as would the baseball if the pitcher could throw in a circle—the sun being the pitcher's box in the center of the ring.

But do we return to the very spot occupied a year ago? No, for the sun, too, moves, as if the whole diamond and planet-studded outfield were traveling, carrying the great Game with it; or like a ball whirled about the head of a man who walks as he whirls it. Whither does the man walk who whirls about his head

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our good air-ship *Earth*? We do not know. We only know that toward some unimaginable goal the sun travels, dragging with him all our planets with all their moons, and a great cloud of comets, asteroids and meteors. It is one of the mysteries incident to the fate of the human race—that of sailing on their ship *Earth* under sealed orders.

We are on this ship as passengers; but there is no café service. The passengers must feed themselves. Moreover, they must subsist out of the ship itself. The ship breaks out in a green rash called plant life. On this, millions of things called animals live by taking the green substance into their bodies and making it over into body-tissue. Certain other animals eat these plant-eating animals. The decks of the ship, even the watery parts, are thus full of growing, and eating, and killing and digesting. And we, the passengers, who believe all this is for us, are of the sort that eat plants, and devour animals, and do more killing and destroying than any of the other creatures on board.

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Now all these plants and animals are made out of the substance of the ship itself. We are all in the same boat with the plants and brutes in this respect—we are made of the earth, and we dissolve back into the earth. When the earth was a molten, uninhabited, uninhabitable mass, it weighed (save for an occasional meteor which we pick up as we fly) to a pennyweight what it weighs now, with its plants and animals and its billion and a half people; just as a cheese weighs no more when it becomes full of mites. We are earth-mites. We are just bits of earth organized into two-legged bubbles of earth which last a score, or two score, or three score years and ten, and then—death pricks the bubble, and we are earth again. We last only for a few whirls of the merry-go-round, the longest-lived of us.

All the time the high places on which we live—the dry parts of the decks called land—are being worn down. And when the plants and animals go back into the earth, a part of them only can be turned again into things the passengers can consume. So there is a loss of

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matter to subsist upon. Furthermore, we passengers multiply in numbers. In some portions of the ship, they are already so numerous that we can not find adequate subsistence. We seem to be growing in numbers almost everywhere. In our part of the ship, we have a hundred millions where a hundred years ago there were not three millions, and we are told that in three hundred years there will be ten hundred millions of us here, in the United States.

Can so many passengers find subsistence on the ship? We are for the first time in our world's history, as far as we know, possessed of the knowledge and the intelligence which make us able even to ask such questions. One by one the bandages have been removed from our eyes, and we see the good ship *Earth* round and entire, and we can achieve some approach to a realization of her problems. What are these problems, and how shall we meet them? We can no longer face the future blindly asserting that all will be well. All is not well. All has never been well. We can no longer see nation go up against nation to

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slaughter and burn with the feeling that it does not concern us. It *does* concern us. For the first time in the world's history, we are able intelligently to ask ourselves what this tremendous voyage on the good ship *Earth* really means, how we are to treat our fellow passengers, how we are to possess our great vessel, whether life for all of us and all our children is possible, and if not possible, who with his progeny shall survive or *should* survive.

CHAPTER II

HOW DID WE COME ABOARD?

WHEN the good ship *Earth*, on which we are all embarked, was first pitched into space, spinning like a curve-ball, she carried no passengers. Then there was only ship—passengers were created out of the materials of the decks, and walked those decks of which they were but now portions.

The ship was a great, cloudy, misty mass of gases, which contained all the atoms that now make up the planet. There was no place for plant or animal. The gases drew together and in doing so grew hot, just as the air grows hot when pressed in the cylinder of an engine—so hot that even yet the inside of our great air-ship is hot enough to melt rocks and make of them lava. Until this cooled there was no opportunity for passengers on the ship—for plant or animal.

Finally the cooling made the rocks and met-

HOW DID WE COME ABOARD?

als solid—but the waters were still steam. There was no ocean—only clouds of steam whirling in fearful storms about the globe, with its crust of rock and its core of fire. Then as the heat moderated, water was formed, and at last there were land and water. But the ship was still without passengers—there were no plants nor animals.

Then, say the evolutionists, the greatest event in world-history took place. Somewhere in the warm waters about the poles, or in the bubbling swamps between the volcanic mountains—somehow, somewhere, sometime—the elements came together in such a manner that out of the atoms of the ship's substance, a molecule of protoplasm was formed.

The greatest word the human tongue can form is God, and the next is protoplasm. Perhaps when we know all, we shall see that protoplasm and God are the same—the one the whole, the other the part from which we can finally arrive at a theory of the whole, if not a conception of it. The mind of man has many deities—but if, under God, there is aught be-

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fore which he should bow himself, that something is protoplasm. For in the appearance of protoplasm, on the deck of the good ship *Earth*, appeared the thing out of which came all that green rash which breaks out and clothes her surface with vegetation, and the moving things that eat the vegetation and one another, and finally, man himself—who fondly believes himself the passenger for whose sole accommodation the ship is launched.

What is protoplasm? It is a strange insignificant slime, and looks like the white of an egg—but it is the mightiest thing on earth. It is a combination of carbon—like that in the diamond or soot—of nitrogen—that unstable thing of which nitroglycerin and other explosives are largely made up—of hydrogen—that gas which bursts with such flame and thunder when the balloon or the gas works blow up—and of oxygen—that element which eats up iron and rushes into the arms of carbon so fiercely as to cause flame when the coal burns in the grate. So protoplasm, like man, has in

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it every factor of revolution, explosion, heat, light, cataclysm, destruction, development and progress. But it is only a slime or jelly. These four elements—and others in smaller quantities—are combined in so wonderful and complex a way in protoplasm, that the wisest chemist does not know the secret of the combination. When nobody knows, we say "God knows!" We know the composition of the molecule of water—it is made up of two atoms of hydrogen and one of oxygen—and even the schoolboy calls it " H_2O ". But God only knows the way in which the molecule of protoplasm is built. The nearest guess at the formula of albumen, or the white of an egg is " $C^{720} H^{1184} N^{218} S^5 O^{240}$ ". This is too complex for the mind to visualize into a realizable thing; and protoplasm must be more complex—perhaps a thousand times more complex.

But we know that when this molecule is formed in the laboratory of God it has wonderful qualities—quite different in kind from any other substance. It has sensibility and irritability. In other words, it feels! It has cer-

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tain movements of its own. It has the power of forming itself into cells, and each cell of protoplasm has the power of taking other substances from its surroundings, and building up new and wonderful forms, all endowed with those new powers of motion, feeling, and regular and successive adjustments to surroundings. In other words, the protoplasm molecule has life.

When out of the substance of the deck of the good ship *Earth*—sailing under sealed orders through the depths of space—the carbon, oxygen, hydrogen and nitrogen of the vessel itself came together in that wonderful molecule called protoplasm, life was born. And according to evolutionary theory, with life, evolution began. And through evolution, came the ameba, the protozoon, the shell-fish, the fish, the reptile, the bird, the mammal, and finally, man. Creation reached the man-stage, and the first great cycle was complete. The ship had its passengers evolved from the ship herself. Thus we came aboard.

If you could take a test tube and make that

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marvelous molecule, it would have life, just as if God made it in the deeps of the primordial ocean. But you can not do it. Perhaps man may sometime perform the marvel—but he has not as yet. God had to take the nebula, spread out mistily over billions of cubic miles of space, condense it to a sun, compress the sun to a molten world, and shake this cosmic prescription for eons, as a chemist shakes a vial, before He got the compound to take form in that wonderful substance called protoplasm—and then it took millions of years for the life in it to rise to man.

When man can do this he can create protoplasm and artificially make life. We, made of this substance and by it, are so far above our primordial slime that we are here in these glimpses of world problems actually facing the question as to whether the doom of man is eventual misery and extinction, or happiness and glory.

Sublime and wonderful march of life! from the globule of jelly, to the being who questions the force which brought him into existence!

CHAPTER III

CHANGING OUR QUARTERS ON SHIPBOARD

MINDS may differ as to how man came into being on the good ship *Earth*. Some will see in man the last stage of evolution—the end of that great chain beginning with a spot of slime—the first tiny mass of protoplasm—and ending with us. Others will see in him a creature produced by a special creative act of God, and quite unrelated by heredity to his fellow beings in the world of life. It matters little to us in this inquiry. However it may be, this is sure, we have been formed in some way out of the dust of the earth—out of the planking of the decks of the ship on which we voyage.

Here we are! We must live. We must live *together*. We must win our subsistence out of the decks from which we have been formed. Our quarters on the ship must be found somewhere on her broad decks—those portions

✓ CHANGING OUR QUARTERS

which rise out of the water, and which we call land. How shall we occupy it? What shall be our relations with one another? Shall we fight and quarrel for the best places, and eat one another up, as people have been known to do when cast away on other ships? Or shall we organize and place the matter under regulations? In fact have we not already apportioned among us this great original *Zeppelin* on which we career through space? If so, is the apportionment the best that could be made?

Is it permanent, or shall we—*can* we?—move about, as nations, changing our quarters on the ship—moving fore and aft and from starboard to port? In the nature of things, can any apportionment of the *Earth* among its tenants be permanent? Is there such a principle as right? If so, can it be applied to our earth-tenancy? Do we need to find and apply the principle, if it exists, or will it come into operation automatically—by some force outside ourselves, like the wireless control that guides our ship in her flight?

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Perhaps we shall be able to throw a little dim light on some of these matters. But first, what are the big facts as to our present quarters on the ship?

How many of us are there?

There are between a billion and a half and two billions of us. We are not very evenly distributed over our land-and-water *Zeppelin*. Many things tend to make us gather in dense communities in some places, and to scatter very sparsely in others. First, we are land animals, and the seventy-five per cent. of our good ship *Earth* which is below the water level, we can not inhabit. So we give it over to the amphibians, the fishes and the other swimmers. This must always be so, or at least it must be so until the water of the earth, like that of the moon, has all been absorbed into the body of the planet, and there shall be no more sea. This will sometime come to pass. Whether or not man will survive to see the day no one can with certainty say.

And even as to the solid surface of the ship, we find great areas of deck room upon which

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we can not live. The thing most decisive of this is temperature. Life could not appear on earth, until things had cooled down to the liquid point of water from its condition of steam. And life must first have appeared in the then coolest parts of the globe. These coolest spots were and are the poles; and at the poles—or one of them—life doubtless first came into being. Perhaps the first nations of men lived, and fought, and struggled with these problems, at the poles. Instead of being the discoverer of the pole, Peary merely returned to the ancient home of the race.

But the poles are now too cold for successful human life. So are the polar regions, reaching down a third of the way or more to the lands which lie amidships. Sometime, these arctic regions may grow warmer again—we shall speak of that hereafter—but now, man must abandon great portions of his ship's decks to the seal, the bear, the fox and their frost-defying fellows. These regions have cooled off so much as to spoil them as quarters for any very large numbers of passengers.

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So, too, as to the equatorial belt amidships, the temperature has prevented its being the quarters of very dense communities of people. There are some exceptions to this, but on the whole, the torrid zone is too hot for successful human life. The people there are lacking in both numbers and energy.

The best place on the ship is in that strip each side of the equator where it has cooled off to just the right temperature; and here, principally on the north side of the hot belt, the passengers are mostly found quartered. So dependent are the "lords of creation" on the mere matter of heat and cold!

But almost as powerful is the factor of moisture. Where it is too dry, the dead matter of the decks of the good ship *Earth* does not readily fuse into the protean shapes of life. The force which works through that mighty slime called protoplasm, works with water as a tool—and whole continents are in a measure unfitted by lack of moisture for the occupancy of man.

In fact, no limitation is more susceptible to

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accurate computation than the water limit to population. Living beings must take from the soil the matter for their bodies. Plants are the first agents in this, and without plants there could be no animals. The plant is a factory in which raw material for the making of animals is lifted half-way to animalhood. And plants are able to take their food from the soil only as it is dissolved in water. The amount of water required for the support of human life has been made by McGee the basis of a determination of the possibilities of the United States in the matter of population. He shows that the water falling on the land surface of the United States is sufficient to dilute plant food sufficient for the maintenance of the material basis of a thousand millions of people here.

Of course, this determination is subject to all sorts of modifications; but the principle must be admitted, that there is a relation between the water available for plants and the animal life capable of being supported on earth. The life—including human life—must

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be limited by the supply of water for the dilution of mineral plant food. All animal bodies are made up of soil elements dissolved in water. All plants require water to be transpired through their leaves in the process of growth, as well as to be retained in their tissues; and all animals are derived from plants. It is not, therefore, accidental that the word "desert" which really and fundamentally signifies any place which is deserted, has come in English speech to mean a spot or region waterless or poorly supplied with water. Temperature is the first requisite for life; mainly because it is only within a certain range of temperature that water can act as the universal solvent of the raw materials of plants, animals and man.

So man must ever be herded into those places where the tyrant spirits of heat and moisture allow him to live. His quarters on the ship are determined by them.

A third of us are crowded into Southern and Eastern Asia. Fifty millions of us are in the few small islands of Japan, because of the

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moisture and warmth of the climate. Three hundred millions more are in China, and swarms equally numerous are in India and her neighboring hives.

In the continent of Europe, there are well toward four hundred millions of us. And in North America, we have about a hundred millions. These and some islands are the densely populated places. Here are most of the passengers quartered.

No captain has sent men to these quarters, except Captain Necessity and Captain Power. They have fought like beasts for them, and the decks of the ship have run red with blood by reason of migrations of passengers from one part of the deck to another. In past ages these surgings back and forth have been blind and mostly unobserved save by those engaged in the fighting. But lately by reason of the very simple physical fact that we have found out how to put thoughts on paper and multiply the papers by machinery, and also send thoughts along wires in no time at all, and because we have found ways of traveling over

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the watery places on the decks, all these conglomeration of peoples called nations have come to know about one another, and to watch one another; and in some sort of way, to understand one another—though not very well.

And the wise ones among men are wondering how we, in the ages to come, shall occupy this land. They of the crowded spots want to move over into the places which are not crowded. Shall they be permitted to move? Have they the right? Who shall decide?

There are millions of acres of good land which is sparsely settled because of facts aside from its fertility. It was remote from the place in which the race had its first home; or it was in one of those hinterlands from which the old races were barred because they traveled mostly by water; or it was peopled by savages who were kept from multiplying and condemned to perpetual savagery by wars and ignorance of the use of tools; or it was across the ocean from the body of the human race. Now it is known to all men, and needed by millions—yet it is sparsely settled.

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They who abide in the sparser places do not like to have people of other religions, colors and languages coming among them in large numbers. Some nations are more intelligent than others—or think themselves so—and desire to keep out the “inferior races”. All, without exception, think themselves the best people in the world. So the nations stand in their various quarters of the globe, each armed to keep others from intruding, and so divided by color lines, lines of race, religion and language, that the good ship *Earth* is like a captainless vessel, the occupants of which are ready to fly at one another’s throats. And things—some slow, some quick—are happening which make it more and more difficult to keep the crowded nations cooped up where they are. Thus the future lowers dark with problems—and for the first time in world history, the people are wise enough to see the problems.

And to solve them? Perhaps. But if they solve them—they must do it by thinking about them. That is why this is written.

CHAPTER IV

THE RIDDLE OF THE RAW MATERIAL OF MAN

THE great race problems on the good ship *Earth* have always grown out of the moving of those great cliques of passengers called nations or tribes from one part of the dry decks to another, and jostling other peoples about, throwing them overboard, putting them to death, enslaving and otherwise exterminating them.

In the future why should these movements take place? Are they likely to be necessary? And if so, what will make them necessary? Come to the bank of the river—the nearest river—and I will show you one reason why we may have to move sometime.

If it be after a rain, the river—any river almost—will be roily. If it be the Missouri, the Tennessee, the Ohio, the Red, the Platte, the Arkansas, the Sacramento, the Alabama,

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the Lower Mississippi, or any one of a hundred others, it will be found turbid with earth, whether one looks just after a rain or not. And in this fact lies one of the greatest dangers to our part of the ship.

What is it which discolors the rivers? It is soil. What is soil? I might give you a long and learned definition, but the plain English of it is, "Soil is the looser earth, spread over the surface, and in which plants can grow." It is an essential part of the raw material of man—and woman.

It is the dust which has gathered on the decks of the good ship *Earth* by the trampling of the feet of the rain and hail, the grinding hoofs of the ice, the crushing and prying lever of the frost, the wearing sand-blast of wind-blown particles and the washing of the waters. Until soil appeared on the ship, there were decks clean as cement sidewalks, or sterile as piles of building stone—but no place for the green rash breaking out on the decks which we call vegetation. And until vegetation came, there were no animals;

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because they must have the raw earth worked over in plants or other animals before they can assimilate it.

It took more centuries than you have hairs in your head to make a good soil. In the millenniums which have passed there has been a race between the accumulation of vegetable matter and the earth-dust made by the elements and the forces carrying it away, in which the deposits of soil have managed to keep just a little ahead of the natural wastage by blowing, washing and other erosion. Maybe on a square foot, there would be a teaspoonful more of good soil at the end of a century than at the beginning. Increasing at the rate of a teaspoonful a century, given centuries enough, and the soil is eight inches deep, though the average soil is shallower than that.

In his action on the soil, man has shown most strikingly that he (and he only of all animals) has been clothed with power to destroy the globe from which he has emerged, as far as habitability is concerned. He finds a new continent covered with trees. Beetles,

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scale-insects, moths, funguses and bacteria do the same thing; and they kill trees; but man is the only living being who can keep them killed. Beavers can cut them down; but man alone keeps them cut down. He found the American continent covered with trees, in large part, and that just at the era when tree-cutting machinery had been or was about to be perfected, and he proceeded to destroy forests over an area half as large as Europe. He has been obliged to do this in order that he might found states, build a nation and extend civilization. He has destroyed the splendid forests which were the fruition of hundreds of years of growth; but it is hardly just to blame him, or to condemn the destruction as waste.

It was unavoidable destruction, and in the main justifiable. If the Pilgrim Fathers could have landed at Kansas City instead of Plymouth Rock, it would have been immensely better. The first settlers would have had prairie land quite ready for the plow on which to live. The colonies would have spread over the Mississippi Valley, with their

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cattle ranges in the semi-arid Great Plains. As more land became a necessity, they would have worked their way into the forests of Indiana, Missouri, Wisconsin and Minnesota—and finally, after densely peopling the prairies of Iowa, Nebraska, Kansas and the Dakotas, and rich forest plains of Indiana, Kentucky, Ohio, Oklahoma, Missouri, Arkansas and Tennessee, the black lands of Mississippi and Alabama, the fertile Mississippi Delta from Cairo to the Gulf, and the coastal plain of Texas, the frontier states of the Atlantic Coast would have been reached by the lumbermen and pioneers. New England would not yet have been opened to settlement. The Appalachian Mountain region would still be a forest. And the Ohio, the Cumberland, the Upper Mississippi, the Tennessee and the Mobile would not flow as they do, thick with the liquid soil from the fields of their valleys. But coming in, as the settlers did, from the east, they were forced to lay waste the forests.

By the destruction of the forests we have bared the soil in the very regions which should

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have been left forested. We have stripped the deck of our air-ship to the action of the moving elements, so that the dust of life is being swept off into the ocean where it may do good to some living creatures, after man has disappeared, but can never again be useful to the present passengers of the ship, or their children. The Bible says that we are made of the dust of the earth. So we are. We can exist only so long as the supply of dust lasts. If we have descendants they must be formed of it. And we see it wasting off into the oceans as if it did not concern us at all!

The wastage of soil in the streams of the United States is 610,000,000 cubic yards a year. A cubic yard is a wagon-load. If we were wickedly throwing this mother-stuff of men into the sea as rapidly as we are letting it wash in, and had a year's loss loaded on wagons waiting to dump at the pier-head, allowing one team to the rod, the string of teams waiting to unload would reach seventy-six times around the world! So fast are we allowing to be undone the thing which it took

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all the cosmic forces millions of years to do. Not all erosion is waste. Slow erosion is necessary. But the destructive erosion of which we are speaking is a peril to the nations.

There are great nations which have so cultivated their lands, that no such waste occurs. They are nations which have kept up the fertility of great areas through four thousand years of constant extraction of food and clothing and shelter for man. And those nations only which can do this, are fit for the ownership of the ship on which we sail. All others are mere ruiners and cumberers of the *Earth*. Is it not time for us to begin if we are to qualify as passengers on the good ship *Earth*? God will surely throw us overboard if we do not meet the demands.

These nations—the Oriental peoples of which the Chinese and Japanese are the best examples—are quartered on those portions of the decks of the good ship *Earth* where human beings are most numerous. Some Europeans are almost as good husbandmen, and live as parts of dense populations, too. We

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have had only a hundred years or so in which to prove our unfitness for the ownership of fertile lands; and we have gone far to prove it by ruining large areas of good soil—and the ruin is going on faster now than ever before.

We have had several periods of public apprehensiveness on account of the immigration of Asiatics into this country. We have adopted the policy of keeping them out. The smuggling trade used to be confined to the importation of goods; but now men are smuggled in. The smuggling of Chinamen is a regular trade among the lawless of our Pacific Coast and along the Canadian and Mexican frontiers. The Japanese, too, have shown evidences of a desire to come to this country in large numbers. Koreans, Hindus, Chinese and Japanese are knocking at the gates of all the sparsely settled countries and asking to be let in. The yellow peril is a reality to our Pacific states, to Western Canada, to Australasia and South Africa. The Asiatics wish to move from lands which seem to be overpopulated to lands

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which are rich in plant food, have good climates and not too many inhabitants. The deepest thinkers are of the opinion that this tendency on the part of large populations to move is no less important, no less fateful, now than it was when the same tendencies on the part of the same peoples hurled wave after wave of war on Rome and destroyed her. Will Asiatic-exclusion laws always protect against these movements? Before considering these most vital things more in detail, let us see what there is in a soil which makes it able to support dense populations. If it is a property which remains forever, then these nations may be able to stay where they are, and leave the rest of us in peace. But if it is something which is taken from the soil by use, then these massed millions may sometime have to move or starve.

It is this property and this only which now concerns us—the fitness of the soil to furnish food for plants—in order that the plants may in turn furnish food for animals. Life is the vapor that distends for the moment the bubble

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called an animal or a vegetable or a man; and good soil is a soil from which that vapor can freely emanate. Protoplasm is the only thing that lives; and good soil is the soil that can furnish to the protoplasm of the plants the food from which the protoplasm can build up animals.

It is possible to tell just what the things are that the plants need. They are ten substances, all of which are found in any good soil—carbon, hydrogen, oxygen, phosphorus, potassium, nitrogen, sulphur, calcium, iron and magnesium. Most of these you can see in some form in any drug-store, or about the house. Soot is carbon; illuminating gas is mostly hydrogen; oxygen is the vital principle of the air, and is given as a gas to some patients by physicians; phosphorus is what glows in the dark when you rub a damp match on your hand; potassium is a soft metal which gives the name to common potash; nitrogen is a gas, hard to obtain pure, but which forms the bulk of the air, and is important in compounds the names of which begin with “ni-

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trous", "nitric", or "nitro"; sulphur everybody knows about; calcium is a brilliant, lustrous, light-yellow element, which combined with oxygen forms ordinary quicklime, and with carbon is the carbide of the acetylene lamp; iron we all know, but rarely see chemically pure; and magnesium is the chief element in common magnesia, but is not often seen pure outside of chemical laboratories.

Doctor Cyril Hopkins, of the University of Illinois, is a great authority on soils, and students of agriculture under him have made of his name a rigmarole by which to remember these necessary elements of plant food. This formula is made up of the chemical symbols for the elements.

"C Hopk'ns CaFe Mg" is the rigmarole. The boys say it means "C. Hopkins, Café, mighty good." The only mysterious thing about the rigmarole to the ordinary reader will be the meaning of the letters which are not the initials of the English names of the elements for which they stand. "C", "H", "O" and "P" are easy. "K" is potassium. All the

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rest are easy until we come to "Fe" which means iron. These are the things which the spirit of time put into the soil so that plants might grow. When any one of them is absent the land is a desert. And when the deck becomes a desert, the passengers have to move or starve.

Only four of these elements give the farmer any trouble on account of their scarcity—nitrogen, phosphorus, sulphur and potassium. All the rest are found in plenty. And the passengers on the good ship *Earth* have chosen their quarters on her broad decks with reference to the presence in the deck-dust—called soil—of these four things—nitrogen, phosphorus, sulphur and potassium. Each presents a wonderful world problem—a problem in our future peace, as well as our future plenty—great enough for a book—a library of books.

CHAPTER V

FOUR PROBLEMS OF FOOD

THEY say the chameleon feeds on air. Well, so do we. And this calls to mind a true story.

Once there lived on the good ship *Earth*—and still lives for aught I know—an Englishman named North—Colonel North, “The Nitrate King”. Of all the earth-beings who have gained dominion over their fellow passengers on this great globular *Zeppelin*, Colonel North once seemed to have the greatest dominion—greater than that of Rockefeller; or Cecil Rhodes, of South Africa; or Clive, the conqueror of Hindustan; or the “Gentlemen Adventurers” of the Hudson’s Company. Greater than the dominion of Genghis Khan, of Tartary, Attila the Hun, Alaric the Goth, or Genseric the Vandal. For it seemed at one time as if Colonel North, the nitrate king,

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and his descendants would be able through their ownership of the nitrate beds of Chili to make all their fellow passengers buy nitrates of them, until the beds should be exhausted; and then all the passengers of the good ship *Earth*—after moving about from one nitrogen-exhausted place to another, and warring and wasting and ravaging as peoples always do when they move—were to starve together, —for lack of nitrates!

What greater deed could a monopolist hope to achieve than to get hold of something which God made for all of us—who are all in the same boat remember,—sell it to us at starvation prices and lord it over the rest of us; even though at the last we should use up the supply, and all starve? Truly, a gigantic and characteristically nineteenth-century conception!

The thing the colonel had cornered was nitrogen for the growth of crops. Nitrogen is one of the ten elements of plant food that must be found by the roots of the plants or they die. And all animal life is based on plant life—and

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we passengers are animals. So there you are! Of these ten elements, only three or four, as we have seen, are often scarce in the soil—nitrogen, phosphorus, potassium and probably sulphur; and the colonel had the nitrogen—or so he thought. For though seventy-five per cent. of the air in which every plant grows is nitrogen, the crops can not use it. It is “free” nitrogen, and the crops can’t eat it unless it is “fixed”—that is, tied up with some other chemical element. There are 75,000,000 pounds of nitrogen in the air which rests on every acre of land; and the crop dies for want of it unless it is “fixed” or tied up with something else in chemical bonds! A soil is in good condition for crops if it possesses two tons of this 75,000,000 pounds per acre—but how to get it?

Science was in despair. But Colonel North, I suppose, was in high feather. For in Chili nitrogen has accumulated in the form of nitrates in the soil until that dry region is the great storehouse of the fixed nitrogen of this great air-ship *Earth* in which we are all passengers, going we know not where. Sir Will-

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iam Crookes put on his black cap and gave out the sentence of science. This was the verdict:

A good soil possesses only from 2,500 to 10,000 pounds of nitrogen per acre. A good crop takes from this store from 75 to 400 pounds per acre, depending on the crop. Call it 75 so as to scare ourselves as little as possible, and give every acre 10,000 pounds, which is twice what we can count on, and where are we? Why, we can see our way to 134 crops, and a part of another. But there's Colonel North with his paper title to the nitrate parts of the decks of the ship which clearly belong in common to all of us—how about Colonel North and his nitrate beds? Well, said science, at the present rate of shipments, they will last only a few decades, at most—some said thirty years, some three hundred—because nobody knows just how much Colonel North had. And then? Why, then, with that illimitable sea of nitrogen about our heads, we shall all gradually die out of starvation! There was no way out of it—human life is based on plant life, and plant life on nitrogen,

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and the fixed nitrogen supply is approaching exhaustion. So said science through Sir William Crookes.

But the good farmers of the world always felt that Sir William was a bit off. They knew that when they planted clover, beans, vetch, peanuts, or any other leguminous—that is pod-bearing—crop, and plowed it under, the soil seemed richer in something afterward. Science said that that couldn't be. "For," said science, "all the nitrogen the legume gets, it gets from the soil, and you can't get any more by plowing back what you've just taken out." Moreover the scientists "proved" by experiment that the pod-bearers don't secrete nitrogen from the air.

"But," said the good farmer, scratching his head, "it is richer, for all that!"

"Nonsense!" said science.

And then the most wonderful discovery of agricultural science convinced the wise men that the farmer was right. Science found that on the roots of these leguminous plants, are little knobs like tiny potatoes, and in the knobs,

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millions upon millions of little plants called bacteria, so small as to be invisible to the naked eye. We used to think they were disease-galls! Suddenly through the patient researches of science, the mistakes of science were corrected; and we were informed that these bacteria, unlike the big plants, have the power to take free nitrogen out of the air in the ground, and fix it so the other plants can get it!

Science threw up its hat. We needn't starve for lack of nitrogen! Colonel North's descendants can't look forward to the time when the other passengers on the good ship *Earth* will come crawling in abject misery, begging nitrates, supplicating for the privilege of living on board a while longer. We can get our nitrogen out of the air.

When God started to build a world, He started from the bottom. When the first plants were evolved, they had to be plants which could get nitrogen from the air, because except for a small amount deposited through the action of lightning, there was none in the rocks. The first plants were one-celled plants

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which could do this. When the clover began business the bacteria came around and asked the privilege of building houses in which to live on the clover roots. "Certainly," said the clover, "but you've got to pay rent." "All right," said the bacteria, "we'll furnish the nitrogen, if you'll look out for the other table board, and the matter of lodging. Is it a go?" "It's a go!" said the legume; and they have been partners ever since, each living on the other, and all taking nitrogen out of the air for themselves and other plants.

In the crust of the earth there is only a trace of nitrogen, and all there is, as far as I know, is in the soil. I suppose that all of it which is in the soil has been taken from the air by the bacteria and fungi—Colonel North's and all the rest. If these tiny, tiny passengers had not come aboard millions of years before us, we could never have come into being. Despise not the day of small things. The basis of all life is too small to be seen by the microscope.

I often wonder what we should have done about North's monopoly, if Crookes had not

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been mistaken. Would the other passengers have recognized his paper title to the power to starve them? I wonder! Many powerful people, of course, would have stood up for Colonel North.

It is, therefore, the clover-plant and its brethren, the peas, beans, alfalfas and the like, that will save the passengers on the good ship *Earth* from being obliged to go crusading in search of soils provided with nitrogen.

I am trying to look at some of the larger problems of the world as concretely as possible. We are passengers on a huge ship driving through space as one of Zeppelin's air-ships drives through air, save that we know not what guides us, and that we spin like a curved baseball, and whirl round and round the sun from which, by wireless transmissions over the ninety-five millions of miles of space which separate us from our planetary "control," we get our light, heat and power.

We are all in the same boat. We did not make the boat—we ourselves are made from the dust on the planking of her decks. We are

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divided up into nations, clans, tribes, classes and races; but we are all tenants of the decks of the ship *Earth*. Looked at as an original question, what are our rights and what our duties to our fellow passengers, and the great property—for the ship is really our property—which our children must be made of, and live upon?

We have learned that as animals we must live either on plants, or on other animals which have been made of plants—plants which break out in a green rash all over the decks of the old boat. And that there are ten things which must be found in soil or air before a field can nourish plants—every one of the ten: carbon, hydrogen, oxygen, phosphorus, potassium, nitrogen, sulphur, calcium, iron and magnesium. Of these there are only three or four that need give us any uneasiness—nitrogen, phosphorus and potassium—and probably sulphur. Not that these are any more necessary than the other six or seven, but that they are soil elements that are scarce, and the using

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up of which would put an end to the human race by putting an end to vegetation.

We have seen that there was once a scare for fear that the nitrogen would soon be exhausted; and that we discovered that certain plants of the clover tribe are taking it from the air all the time when given a chance, and storing it in the soil. So that scare ended.

Let us now look into the hold of the ship and see how we are supplied with potassium.

But first, what is potassium? It is the element which gives its name to potash—which any one may make from the lye of wood ashes. It is found in the ashes of any field crop, when the plant is burned. It is plain, then, if it is a part of every one of these plants, that it must exist where the plant can reach it, or no crop can grow. Potassium is not found in the air as is nitrogen—so it must be obtained from the soil.

In the grain of a hundred-bushel crop of corn, there are nineteen pounds of potassium. An average soil contains enough at this rate to

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make 2,500 crops. No need to worry then? Well, is it any less serious for the race to end for lack of food in 2,500 years, than in one hundred? Or be sent crusading and slaying after new lands in the year A. D. 10,000 rather than A. D. 2,000? If we are wasting what the passengers must some day need, does it make any real difference that we shall not be present to witness their sufferings? It does not seem so to me. I think we should be as alive to suffering in Europe or Asia to-day, as if it were in the next room; and as solicitous for the happiness of the world's passengers a thousand years hence, as next week. Especially as our acts make for or against that happiness.

There are many lands even now which need potassium. We import millions of dollars of it annually. As "kainite" and in other forms it is a very important article of commerce.

The lands which need it most, are not yet under cultivation to anything like the extent which the future will require. As the passengers on the good ship *Earth* multiply and need land, instead of swarming out against

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other peoples, they will, let us hope, draw off the water from the lands that are only just submerged and reclaim them. In other words, we shall drain swamps.

By doing this, we may dry up additional deck room in the United States so as to add to our habitable heritage an area as big as the three states of Ohio, Indiana and Illinois—about 76,000,000 acres.

We often say of a swamp: "Drain it and it will be the richest land in the world." This is always said, and usually it is true. The land of swamps usually is rich in nitrogen, in phosphorus and most other plant foods. But watch a corn-field in a drained swamp, and you will often see the corn turn yellow in July, and you will note a failure of yield. This spot is not helping to feed the passengers. The swamp was a peat-bed, and lacks potassium. So, as we drain our swamps, and as we exhaust the potash from other lands, we shall need to put on the fields untold tons of it. And we do now buy it by the millions of pounds.

Whence comes it? Nitrogen, we recall,

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comes mostly from Chili, and the nitrate beds with which Colonel North, the nitrate king, dreamed of ruling the world in that dreadful day when the world should crawl to him on its belly for nitrogen—that great and awful day of the Lord.

Is there a potash king, then? Yes, and no. If there is one, he is Kaiser Wilhelm, of Germany. The great potassium beds of the world are in his realm. It lies there, in beds 5,000 feet deep—enough for the world for thousands of years, if there were no other place from which to get it. There are no such beds known elsewhere.

But the kaiser dreams no such dream as that of Colonel North; for he knows that we can get potash elsewhere. Not so cheaply, nor in such accessible masses, but we can get it. There are plenty of rocks that contain from six to eight per cent. of potassium—we may be able to grind them and extract their potassium and put it on the land.

And did you ever run over from the California coast to Santa Catalina Island for an

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outing? If so, did you notice the great fields of a water plant called "kelp" that grows in huge beds all along that coast? Well, the department of agriculture has discovered that we have in this weed a possible source of potash, to the value of \$40,000,000 a year, if we choose to extract it. And out of the weed, too, would come by-products like iodine, glue, shellac and paper. Probably these things will in part or in whole pay for the work, and the potash may be clear gain. Isn't it fine to discover so much food of which we were unaware in the sea? For potassium is food, remember—when the crops have worked it up for us. The geological survey, too, have recently found small deposits of potash in the government domain—enough for thirty years.

The German potash princes and the German government have been a little stingy about their potash, lately. We have had a fuss with them about it. And I don't blame them for looking closely after so important a matter. But I'd like to see our government develop our potash industry by opening up our mines,

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and setting up works to make potash out of kelp—for the benefit of the human race, whose very flesh must be made of the planking of the decks of the good ship *Earth*. I'd like to see shiploads of potash come from the kelp of California to the hungry lands of the east, through the Panama Canal, from those government works.

There are pastures in Australia, of a kind of herbage called "kangaroo grass". Live stock fed on this grass for too long a time suffer from a fatal disease of the skeleton, called by the farmers "bone disease". The cause of it has been a mystery until lately.

Scientists have known that the soil is deficient in phosphorus—but they did not know that the plants growing out of it were also poor in this element. Recently it has been discovered that these plants have adjusted themselves to the lack of phosphorus so that they have only one-tenth of the phosphoric acid in their make-up that crops must have on which animals with bony skeletons can live.

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The bone disease is thus accounted for. Phosphorus is an essential part of bone, as well as of blood and of flesh. Any race which possesses "bone and sinew", or "good red blood" must feed on plants receiving phosphorus from the soil, or on animals which have done so—so dependent are we who are made in the image of God, on the very dust beneath our feet, for our moral as well as physical existence. If the soil on which a nation lives loses its phosphorus, that nation must die—or go out killing and ravaging, seeking other lands.

Animals have been fed, as an experiment, on foods deficient in phosphorus. For a while they seemed to do well. Then they collapsed. It takes only three months of a ration without phosphorus to wreck an animal. Individual creatures were killed after a month of this diet, and it was found that the flesh was taking the phosphate—for the phosphorus exists in the body in that form—from the bones to supply its need. In other words, the body was eating its own bones! When this process had

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robbed the bones to the limit, the collapse came, and the animal could never recover.

Now as passengers on the good ship *Earth*, it will be worth our while to look into the hold of the ship and see how much phosphorus the cosmic forces put into the bunkers when they flung us spinning out into space, under wireless control, to whirl we know not where. Shall we find enough? Are we as a race doomed after many famines and pestilences, and wars and rumors of wars to die—perhaps of starvation, perhaps of bone disease—and to leave the ship lifeless, or to plants like those of Australia which have learned to do with little phosphorus, or to boneless animals, fitted for a similar phosphateless life?

This is the indispensable element in which we find the soils of the world poorest. In the original rocks there are only eleven hundredths of one per cent. of it on the average. Good virgin soils are even poorer than this. It is a good soil indeed which has 2,000 pounds of phosphorus per acre in the top seven inches of soil. So we see that in the

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process of making soil, a large part of the original stock is lost.

Where we have worked over the soil—the dust on the planks of the good ship *Earth*—until it is said to be “exhausted” we find that it is usually the phosphorus which is gone—or nearly so. Old soils from the level coastal plain of Virginia, said to be too poor to work, test as low as 340 pounds of phosphorus in the upper 2,000,000 pounds of soil. The worn-out fields of Asia are very poor in phosphorus. Some depleted soils in India have been found to show only what the chemists call a “trace” of it—too little to measure.

In the youth of the race, these old fields made men—but they are now deserts.

“They say the Lion and the Lizard keep
The Courts where Jamshyd gloried and drank
deep:
And Bahráṁ, that great Hunter—the Wild
Ass
Stamps o’er his Head, but can not break his
Sleep!”

And the lion and the lizard will return to

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keep the courts where we reign and glory and drink deep—when the phosphorus of the soil goes. And then the lion and the lizard will themselves go the same road. And then the good ship *Earth* will sail the illimitable fields of space without passengers! Is this what the fates have in store for us?

A fair crop of wheat takes from each acre of the deck room devoted to its culture, 12.5 pounds of phosphoric oxide; barley, 15 pounds; oats, 12; corn, 18, and other crops accordingly. So even our rich lands possess only enough in the upper eight inches to mature from 160 to 250 crops. There is phosphorus deeper than that, and there are richer soils. But where fields like those of Japan, China, Korea and Manchuria have been farmed for forty centuries, we find the farmers now obliged to put back every year as much of this element as they have taken away, or more. A single year's failure to do this on their part, and these nations would begin to starve.

This depletion of the soil makes a full and enlightened life to be derived from it almost

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out of the question. The peoples who are forced by necessity to return to the soil all they take from it are bowed down in servitude to the crops. They carry ordure in buckets and make soup of it for the rice. They seek for dung on the highways as for a treasure, and look upon a latrine as an Iowa farmer looks upon a bank. They climb mountains to pluck herbage which they thrust down into the mud of the fields with their feet. They carefully lift the mud from the bottoms of streams and canals and carry it to the fields for the little fertility it holds. They reap the aquatic plants from waterways as we reap harvest fields, and compost them for the crops. They carry the very earth of the fields to their houses, and mix ashes, night-soil and other fertilizers with it, carrying it back in the proper season to feed the crops. All this is wonderful and admirable as agriculture—but where the books of the fields are so strictly balanced as to fertility the amount of human life expended on the up-keep of the land is almost incredibly near to the volume of vitality which the prod-

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uce of the field will sustain. This is the expression in terms of fertility of the economic pressure on the oldest farms in the world. It tells in terms of human life what happens when the deposits in the bank of the soil have been all checked out by farming.

Yet we, the "civilized", the "progressive" nation, waste our precious store like drunken sailors. The limiting element in even our rich Mississippi Valley soils is already phosphorus. Fifty years of our awful robbery of the store-rooms of the race, takes out a third of the phosphorus—a short fifty years! After crediting the farms of Wisconsin with the return of everything the farmers put back, the net loss per year in phosphorus to that state is 15,000,000 pounds, worth at five cents a pound, \$750,000. Our great "balance of trade" of which we so much boast, and with so little reason, would look much smaller if we deducted from it the phosphorus sent away—the actual land—in the grains and meats and fruits.

Phosphorus does not exist in the air, and being an element, it can not be artificially pro-

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duced. We must find it if we get it. We find it in fossil guano and in the phosphate rocks. There are in South Carolina 3,000,000 tons of good phosphate rock, which will pay to grind; in Florida 166,000,000 tons; in Tennessee, 160,000,000 tons. We are mining this and exporting it to restore the depleted soils of Europe—for profit. It has been estimated that all this store in our Southern phosphate fields will be gone by 1932—probably it will vanish before. We can grind poorer rock, but there is a limit to the lowness of grade which will return as much food as we shall expend in grinding it.

Perhaps there is a region where nature has placed her store of phosphorus, as she did in Chili in the case of nitrogen, and in Germany for potash? There are many rocks still unexplored, and there may be much more phosphate than we know of; but aside from 60,000,000 tons of high-grade in three South Sea Islands, we know of no great deposits save what Uncle Sam possesses in Idaho, Wyoming and Utah—the deposits the conservationists have fought to keep them out of private hands.

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Uncle Sam is the Colonel North and the Kaiser Wilhelm of phosphorus—with 9,500,000,000 tons of good rock in his bunkers.

But no matter how rich the rocks may be, within any reasonable probability, the supply will give out unless it is rigidly conserved—and the race will die. Once there were millions of tons of it—called guano—in the droppings of sea-birds on Pacific islands. The sea-birds catch fish—which have much nitrogen and phosphorus in their bodies. These fish pass through the digestive organs of the birds, the unassimilated parts being dropped on the islands where the nests are made. The old Peruvians protected the sea-birds from destruction; for they knew that these winged benefactors were retrieving from the ocean the lost fertility of the globe.

But we are civilized, and kill the birds. The last men on earth may be grouped about the spots whose phosphorus has not been lost from the soil—spots like the phosphatic soils of the bluegrass region of Kentucky, and similar portions of France, and some other countries; and

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in regions kept populated by the fertility retrieved from the sea by billions of sea-birds bred for the purpose. But before that time comes, as unless we change our ways it will, the world will tremble with the tread of armed hosts leaving lands depleted of this phosphorus, and hunting new lands.

For many years we have believed that there are only three elements of mineral plant food which are likely to give us trouble by their scarcity—phosphorus, nitrogen and potash. To these, however, we must now reluctantly add sulphur. The analyses of plants on which chemists relied as showing their needs in sulphur have been shown to be unreliable, because of the fact that this element escaped in the fumes thrown off in the chemical laboratory, and was to some extent lost. We underestimated the amount of sulphur taken out of the soil by the crops.

We were lulled into security, also, by the fact that sulphur falls from the skies in rain and snow. At Madison, Wisconsin, where the latest determinations have been made by Hart

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and Stevenson, the annual precipitation of sulphur in rain and snow is from fifteen to twenty pounds per acre. This is enough for the crops if it were all available; but much of it falls outside the growing season, and a good deal is lost in the run-off of water and carried away by drainage.

That the supply is not sufficient for the requirements of farming is shown by two facts. The first fact is that soils cropped for from fifty to sixty years have lost forty per cent. of their original supply of sulphur. The second is that when sulphur is applied to the soil the crops are improved, which would not be the case if this element were not getting scarce.

Most authorities disagree with this statement as to the scarcity of sulphur. It is a new idea, and is not yet generally accepted. It may be an error. But, if it does turn out to be scarce, fortunately, there is no lack of sulphur in the earth's crust. A ton of gypsum contains about 900 pounds of sulphur; and gypsum is found in enormous beds in most parts of the world. Phosphorus is ordinarily

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applied either in the form of ground phosphate rock, or in superphosphate, which is phosphate rock treated with sulphuric acid. This latter fertilizer carries from 200 to 300 pounds of sulphur to the ton, in addition to its phosphorus.

Our ancestors used to apply "land plaster" (which is ground gypsum) to their farms seventy-five years ago, with good results. There is every reason to believe that we shall be obliged to return to a modification of this practise. The sulphur problem is not an insoluble one, but it calls for study, and the restoration of sulphur to the depleted soil is one of the tasks which confront the mariners who navigate the good ship *Earth*.

CHAPTER VI

A THING OFTEN WORSHIPED—FORCE

WE honor the man of whom we can say —“He does things.” We are not so very discriminating as to whether he does things inherently good, or inherently bad. The James brothers were very popular men among their neighbors, as were Dick Turpin and Robin Hood among theirs in Merrie England. They did things.

Napoleon was adored because he did things —without reference to whether or not they were good or bad. He murdered France and was adored by France.

Some women are prone to like men who dominate them. The Sabine abduction is ever ratified by cunnubiality—no Rome fails of population when possessed of men like the ruthless sons of Romulus. The wolf breed conquers by the mystical lure of primal

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force, and love follows—some sort of love. Dogs lick always the hand of a Bill Sikes.

In all ages and everywhere, by a universal instinct, the human being worships force. For it is all there is in the universe worth worshipping. The instincts of men and women are always justified in the court of last resort—the welfare of the race.

The sun has been worshiped more generally and more intelligently than any other natural object. The ancient Peruvians possessed the most striking temple of the sun, but Greeks, Romans, Parsees, Norsemen, Persians and all the rest have been sun-worshippers. Our day of worship is still Sunday. And if in a really godless world, science were called upon to choose the thing to deify, it would choose force as the god, and could find no such adequate representation of it as the sun.

We used to say that in all the universe, there are only two actualities, matter and force. We now, by the radium discoveries, find that matter seems to be only a form of force. So our minds are brought to confront the apparent

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proof that there is only one thing real, and that is force. If so, the blind worship of force is very close to the intelligent worship of God.

The springs that move every living thing are wound up by the sun. Protoplasm, the only living thing on earth, has movements. These movements exert force. This force comes from the sun. All processes of life, from the blow of the prize-fighter, or the thrust of the lance of Sir Galahad, to the thought that is recorded on this page, or the blossoming of a lily, are the result of cell-activities in plant or animal, and these cell-activities all are made up of impulses from the sun, imparted to the earth through its rays.

The higher types of animals are warmer than their surroundings. Their heat is obtained from inner fires kept burning by supplies of fuel in food. An Eskimo uses whale oil or seal or walrus or fish oil for fuel in his body—he drinks it and eats it. He also burns it for outward heat. We do the same things—we eat oils in nuts, fat meats and salad oils, and we burn it in lamps, stoves and fur-

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naces. Oils are merely stored energy from the sun—solar heat has given atoms a certain twist, and when this twist is freed the resulting kick shows itself in heat. So of starches, sugars and those foods like lean meats which we call proteins. The sun warms us directly; and indirectly he piles his force up into the atoms of foods and fuels, so that we can utilize the power he poured upon the earth eons ago.

We ourselves are alive only because the heat-units which our beings make over into life-force have been stored in the decks of our good ship *Earth* and embodied in us. We are sun-created. We may say we are composed of matter and force. The matter is of the earth, the force is of the sun.

There are black, dead, cold planets in the voids of space among the bright stars of heaven—thousands of them—perhaps millions. They do not shine. When one of them comes between us and a star, the light of the star goes out. Some of them are twinned with a shining star, the dead twin and the live one revolving as though connected like dumb-bells by an

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invisible rod. Some such stars are variable or intermittent, the bright one dimming or disappearing as the dark one comes between us and its shining twin.

These dead suns and dead worlds have lost a great deal of their force or energy. Perhaps some of them still have as much as have we—for our good air-ship *Earth* does not shine as a sun, but only glows moon-like. These worlds, though dark, may be habitable. We do not know. But we can not see how any world can support life, which does not receive from some sun, which is itself too hot with force to be habitable, a supply which the magic slime, protoplasm, may work up into living beings.

The force we get hourly from the sun, we may use as a family uses such an income as a life annuity. All we can get out of it belongs to us, and when we die, as far as we are concerned it stops. If we don't get all we can out of it, we are foolish. We are passengers on the ship—and if we do not use the sunshine, the wind and the waters that flow and surge in

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tides of force all about us, we have ourselves and our ignorance and inefficiency to blame.

But in the decking of the ship—in that thin crust of rock planking that we stand upon, and which separates us from the molten core within, there are bunkers in which are stored force which came to the good ship *Earth* while the forces of the cosmos were preparing it for our voyage. In these bunkers are the bodies, brains and blood of the coming race. These are like deposits in bank, which, when drawn out, are not replenished by new deposits. God opened the account and handed us the Book.

“Increase, multiply and replenish the earth,” said He. “I will send my rays upon you as needed. And in future ages after knowledge shall have been increased, you shall discover the oil, the coal, the gas and the power that comes from falling water. Use the income of the planet freely, and make the most of it. But the deposits which are in the bunkers of the ship I have given, exhaust at your peril. For the bunkers once emptied, will never be refilled!”

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So, while we were savages weak in knowledge and knew not of the smallness or the largeness of our Zeppelin *Earth* we were weak also in power to take from the deposits in the bunkers. We dug a little gold, a little lead, a little zinc and some copper, but no coal, and we knew nothing of the oils and gases beneath us.

As for the forests, we had only weak ways of cutting them down, or of sawing the logs, or of carrying them when cut. Only a small part of the deck-dust soil was tilled. Suddenly—in less than a century—science smiled on us, and we found ourselves blessed—or cursed—with knowledge and the power to take out the deposits. We have found out how to draw checks on the bank God established for us, and which the sun filled in all those ages, but is now filling no more.

Shall we use the power unrestrained by the knowledge which comes with it?

It is the old story of the freedom of the will—the ethical riddle of the sphinx. The young world has come of age—and we present pas-

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sengers are the world. Are we drawing checks recklessly—wasting the deposits God gave to us and our progeny—or, are we conserving them? Let us see!

How many readers ever heard of a cement boat? I don't mean a boat loaded with cement, but one made of it. Such craft are in existence and successfully used on some of the waterways of Europe. They are easily mended if stove, and can be made in compartments so as to be unsinkable.

Once there was made a huge cement craft in the form of a raft—only it was many miles long. It was reinforced to some extent, but was really not subjected to much strain, on account of being so much longer than any wave, and every square yard of it being upheld by the water, just the same as every other square yard. The strain was no greater than that upon an island. A rim was made about the edge, and the decks filled in with good rich earth to the depth of several feet. Great caves were made running through the cement

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island, which were at the same time air-tight compartments, and roomy cabins for all sorts of purposes—mostly living-rooms. The earth was planted in various trees and crops, and in a warm climate—which was the sort for which it was intended—the artificial island could produce all the food the thousand men and women on board needed. The raft was made with a lagoon in the center, like a coral atoll, and there was a braced passage for the entrance of ships.

It was built for a floating breakwater and dry dock for a Pacific location, where the nation building it had no harbor and no right to anchor permanently inside the three-mile limit. It was really a floating harbor and colony.

Running through the cement structure were certain great chambers, which were filled, some with coal and some with oil and some with compressed gas, for fuel, light and power purposes. The coal was dumped into these cavities, covered with gunny sacks and the cement poured over the top to harden, so

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there was no waste room—the cavities were filled chock-full.

This great artificial floating island was lost on its way around Cape Horn, by a storm which wrecked most of the steamers that were towing it and blew the rest away. With all its people—a thousand men and women—it drifted into the Sargasso Sea, where the currents run about the Atlantic in an immense circle, making a great slow whirlpool, out of which nothing ever drifts. It is full of seaweed and wreckage—all slowly drifting round and round and inward toward the center—and has strange fishes and birds all of its own. The thousand people were lost—for the Sargasso Sea is out of the track of the ships that cross the Atlantic.

There was artificial land sufficient to make subsistence easy enough, by a resort to intensive gardening. The trees soon grew so as to make the place beautiful. In fine weather everybody slept in the gardens on deck. The living-rooms below were well lighted with gas, and were really pleasant when the

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weather was rough outside. It was not so bad a place, after all. Here the people lived and married and had children and died and were buried in the green depths of the sea.

One day, it was discovered that the coal in the bunkers was being wickedly wasted. Three-fourths of it were being thrown away—just because it was inconvenient to handle. What was used was burned in such a manner that not half of it did anybody any good; the portion wasted in smoke made life on board disagreeable to all, and worse still, the portion used for making electric light was more than ninety-nine per cent. lost in converting its energy into current! This was one of the first real troubles they had; for they did not know what would become of them when the coal was gone.

A meeting was called. The people on board asserted that they were all equally interested in those supplies on which the well-being of all depended. But those who were handling the coal business refused to admit that the others had any rights in the case. For on di-

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viding up the island when they were cast away, the decks, on which opened the hatches leading to the coal bunkers, were assigned to these coal people—and therefore the coal in the bunkers had passed into private possession, and become private property. The passengers, however, laughed at this theory of private property when it was put forth by the coal “owners”, and took possession of the coal as a part of the common property of all, and began a course of economy in taking out and using it by which they so conserved the coal that when the island was finally rediscovered and the people taken off, there was still a great deal of coal in the bunkers, though several years had elapsed.

The above is an allegory, or as Jesus called such stories, a parable. It is the shortest way I know to tell you the coal problem which confronts us passengers on the good ship *Earth*.

There is only just so much coal in the earth. Does it belong to all of us, or only to those who have deeds to the land above it? I don't

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mean in law—I know what the courts would say—but in real truth and in real fact, by that higher law which forbids the waste of those things on which the race must base its future life? Careful estimates have been made leading to the conclusion that if we keep up the increase in the consumption of coal at our present rate, the supply will give out in one hundred and fifty years. I believe there will be much of coal long after that; but this is certainly true—sometime it must be exhausted if we keep on mining it. That's as certain as death. And we are as wicked and cruel in our waste if we bring this awful catastrophe prematurely on the world ten thousand years from now, as in ten years. Can one escape that conclusion?

The people who are handling the coal business for us on the good ship *Earth* are wasting the coal. From one-half to three-quarters of the anthracite and half the soft coal are wasted in mining. It costs less to take out only that which comes easiest, so a great deal is left to be hidden forever when the props come

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out and the roof caves in. Thus, the companies make more money, and we get cheaper coal than if it were properly mined.

There are nearly a hundred thousand beehive coke ovens in the United States which waste fifty million dollars' worth of the goodness of the coal annually—all the gas, all the tar, all the heat developed in the coking process and all the fertilizer are wasted—fertilizer our hungry soils need so sorely. Ovens such as are used in really civilized nations would save these—and make their owners money. One-twelfth of all our coal goes up in black smoke—or \$40,000,000 a year. Mechanical stokers would save almost all of this. Van Hise says that in one fair-sized plant the smoke-preventing machines save more than a third of the coal. It is certain that this smoke curse could be prevented.

Only one per cent. of the coal's energy is realized in light when burned to make electricity! We should make our lights of other things—water-power, for instance.

In using coal for power, much more could

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be made if the fuel elements were converted into gas and used in gas engines instead of steam engines. It is perfectly well settled that coal converted into producer gas gives more than two and a half times the power that it does when used to make steam. Think of saving two-thirds of the coal burned in stationary steam engines! But it takes better men, more intelligent men, to run such engines. So what we need is more intelligence in the mine owners, more intelligence in engineers, more intelligence and better morals all along the line. We could get along with less than half the coal we burn, if we tried hard. And there is a way by which we might do a great deal better than that.

The big question is, of course, to whom the supplies belong which God has placed in the hold of this good ship *Earth*. Suppose they were threatened by an accidental conflagration, how the coal barons would call on every good citizen to fight for the "heritage of the race!" Why isn't it our heritage when a money-making conflagration is ravaging it?

CHAPTER VII

SOME IMPENDING MIGRATIONS

IN these sketches of world problems, we have considered how the passengers on our terrestrial *Zeppelin* have been assigned their present quarters, and why they are crowded so largely into Europe, Southern and Eastern Asia, and Eastern North America. The basic reason lies in the supply of potash, nitrates and phosphorus in the soil, on the planking of the decks. For where these things occur Mother Earth has that blessed breaking-out of green rash on her skin, called vegetation—and on that animal life is based. But there are many regions in which these elements are plentifully found, but where the climate forbids successful community life, or, at any rate, forbids a dense population. It is too hot—as in the tropics; or too hot and wet—as in the forests of Central Africa or Central South

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America; or too hot and dry, as in the Sahara; or too dry with a good temperature, as in much of North America; or too cold, as in a great deal of Canada, Labrador, Siberia, and portions of Russia and Patagonia. Greenland, Iceland and the unknown antarctic continent are almost always frozen.

With the human race so growing in numbers, it seems certain that new lands will have to be occupied peaceably; or the old fierce game of war and conquest and extirpation must be resumed.

The passengers used to kill one another off more than now. Away off in the unknown wilds of Eastern Asia, some great brute of a murderer like Genghis Khan would arise and assail his fellow men using other fellow men as a weapon, and the tribes and nations would begin to be driven against one another like a row of falling bricks. The huge continent would shake with war—and finally, the wave would surge westward until our ancestors in Europe would be involved. Under the beating of such waves, Greece was sub-

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merged, and the Roman Empire went down in ruins. The passengers were seeking new quarters, that's all. But now, we seem to have ceased for a while to do this—in their way at least. And with the falling off in murder there is an increase in people.

To help on this increase, science is mastering disease. So in spite of famine and poverty, men are so multiplying that new quarters will one day be absolutely necessary. The passengers are in many places getting too numerous. In peaceful China and prolific India, and probably in some other countries, the limits of subsistence are already being pressed upon by sheer force of numbers. Where is the new land for the new billions?

There are two directions in which the land-swarmings of the future may move. They are north and south. In both directions the climatic conditions are so rigorous as to have kept men from multiplying under them to any great extent—for the hot regions of the air-ship amidships, and the cold regions at stem and stern are both sparsely supplied with

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passengers. Where, as in some densely-peopled tropical regions this is not true, the community life is not successful.

Climate! This is the one thing man has never yet been able to control. Almost every other phase of his environments, he can modify. He can cause new and more useful animals and plants to supplant the ones Nature gave the earth. He can annihilate distance. He can chain the spirits of coal. He can harness the winds and the rivers. But he has never yet changed a climate. There be those who think that arid climates grow moister with the cultivation of the lands, but such minds are duped. There does not fall on the average a drop more of moisture on any acre of our great arid and semiarid plains than fell there on the average before a plow was put into them. Climate has always been the master of man.

But will this always be so? No, without intending to do so, man is already affecting the climate of the whole earth. He is doing this by a thing never done before in the his-

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tory of the globe—the burning of coal. Whenever a ton of coal is burned, there passes off into the air a great many vapors. Among them is carbonic acid, or carbon dioxide. This is the gas that gathers in the well and kills the man who unwarily goes down to clean it. It passes into the air as a product of combustion everywhere that combustion takes place, and always has. It is breathed in by the leaves of plants. It is fatal to animal life if breathed in too strong a mixture, but in the amount usually found in the air, unless in an unventilated room, or well, or mine, it is not hurtful; in fact it is probably useful. The forest fires, the prairie fires, the rotting of vegetation, the transpiration of plants—all these have always kept in the air a certain amount of carbonic acid gas.

And now man is adding to the amount by burning coal as nothing was ever burned on earth before since the fires of its glowing core were quenched by its crust. Up to 1845, man had burned 27,700,000 tons in all history. In the one year of 1911 we burned not less than

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500,000,000 tons! This is a terrific thing to contemplate—the passengers engaged in such a tremendous robbery of the coal bunkers—but we are now concerned only with carbonic acid gas, and its effects on the climate.

If we keep up the increase to even half the extent which seems certain, we shall pour into the air enough carbon dioxide to double the amount of it in the atmosphere in eight hundred years. The probabilities are that the amount will be tripled in less than a thousand years—and your children and mine will be here then!

One of the greatest scientists in the world is Arrhenius, of Sweden. He is a chemist and physicist, and has studied this matter. He shows that this proportion of carbon dioxide in the air will make the climate warmer, by acting like the glass roof of a greenhouse. With the carbon dioxide increased from two and one-half to three times, the temperature of the whole world will be raised eight to nine degrees centigrade—and Greenland will have a good climate for farming. All the good soil

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of Canada will be in as temperate a climate as that now enjoyed by Missouri.

Corn will be grown in the Peace River Valley. Oranges will be an orchard fruit in Arkansas and Virginia. The suburban residents of Chicago may literally sit under their own fig trees and scuppernong grape arbors. Cotton will be a staple crop in Iowa. Bananas will fringe the shores of the Gulf. Siberia will become the greatest farming country in the world. The great antarctic continent—one of the greatest on earth in extent—will be the Western Canada, the Scandinavia, the Siberia of that day, and will have millions of people. The interior of Alaska will be as warm as Maine now is. And the heat of all the tropics will be augmented for thousands of years.

The increased heat will cause more evaporation of water vapor from the oceans—and as what goes up must come down, this will cause moister climates almost everywhere, and our dry-farming regions will become as wet as Ohio.

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And then, the passengers on this good ship *Earth* will have vast fields of good land upon which to multiply—as it seems to be their fate to do. All this will take place in a time shorter than the history of England since the Norman Conquest—in twice the time which has elapsed since the governor's palace was built in Santa Fe, New Mexico—our youngest state!

This voyage on the good ship *Earth* differs from other voyages, in this, that nobody gets off the ship—death is only a name for being reabsorbed into her decks; and birth is only an expression of the idea that portions of the decks have taken on the form of a baby, which will take into itself more and more of the ship, until it grows up. And with birth embodied in the earth of the body, and with death disembodied from it, is the mystery of the soul.

And inasmuch as nobody gets off, the number that are born among us becomes an important matter—we shall come to a fuller con-

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tact with that problem later. Just now what concerns us is the fact that in spots the passengers are getting too thick. New quarters must be found for the increase.

Millions may be stowed in the places now recognized as desirable and still unoccupied or only half occupied. Then we are going to spread northward in the northern hemisphere into Siberia, Canada and other lands now sparsely occupied by reason of the cold—because the climate of the whole world will grow warmer and warmer as the air is filled with carbonic acid gas from the consumption of coal—and we shall even be able to re-people Greenland and spread toward the south pole into the antarctic continent. All this within a thousand years, as there is reason to believe.

But are we to leave the tropics as uninhabited or sparsely peopled jungles and llanos and pampas and silvas? We have never been able to develop successful collective life in the torrid zone. Why? Is the land there lacking in the elements of plant food on which alone

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human life is based? Far from it. The richest lands in the world, judged by their products, are in the tropics of Southern Asia, Central Africa, Central South America, and such huge islands as Borneo, Papua and the Philippines. They are well watered. They bring forth amazingly. Where scientifically cultivated, as in Hawaii, they prove themselves capable of producing food and shelter for dense populations.

Why, then, do not all the crowded passengers in the ship go to the tropics, where these rich lands are, by the millions of acres, occupied only by the wild beasts, birds and the riotous vegetation?

There are many reasons—reasons of state, reasons of race prejudice, reasons of difficulty on the part of the migration of poor people. And there are inherent reasons.

The very richness of the tropics makes them hard to reclaim. In the canal zone, a road built to a farm is grown up and impassable in a few weeks. The trees and vines and huge weeds are foes to man. They overwhelm him.

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They daunt him. They make it almost impossible to him to clear the land, and almost as impossible to keep it cleared.

Then there is the question of health. Until recently white men have found it impossible to live a full strong life in the tropics, or to perpetuate their race there. The British in India last but two or three generations. Our people in the Philippines may be expected to perish in the same way, unless—unless we Gorgasize and Goethalsize the Philippines. I mean, unless we do them as we have done in the canal zone.

In making the Panama Canal, we seem to have solved the problem of white life in the tropics. Doctor Gorgas and his health department, under the rule of Colonel Goethals, have made the most pestilential spot on earth, perhaps, a region where white men can work, and work hard, and where white family life seems perfectly possible as a permanent thing.

This is a greater achievement than the building of the canal itself!

Disease comes in the tropics, as elsewhere,

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mostly in the form of evil bacteria in the blood, and animal parasites in the body. These produce diseases. The proverbial indolence of the nations of the tropics is largely the result of disease—like hook-worm. These germs and parasites affect both the men and their live stock. The tsetse fly fights back farming by killing the domestic animals in South Africa. The sleeping sickness kills off the people. Cholera ravages the tropics, and bubonic plague and yellow fever and hook-worm and many other plagues. But these diseases are one by one being conquered. Yellow fever and malaria are mere questions of mosquitoes, and the Panama and Cuban experiences prove that they can be coped with. A simple remedy and very effective preventives are known for hook-worm. New anti-toxins and serums are found every year. We can now see the end of the terrors of the tropics for the white race.

The other great scourge of the tropics is commercialism, and its accompanying slavery and peonage. The horrid debauch of greed

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in the Congo State under the accursed Leopold was commercialism hunting ivory and rubber. Yucatan and henequen, Bluefields and bananas, Hawaii and Java and sugar—these sinister couples might be added to indefinitely. Spanish America and her princely haciendas are other names for land monopoly and slavery. The destruction of men in the tropics by disease germs and parasites is not so awful as that by human parasites!

The slogan for the human race seeking to move into these great vacant spaces on the decks of the good ship *Earth*, therefore, is science, democracy and cooperative industry. Science will ward off disease and point the way to successful production. Democracy will eliminate privilege and give to each man the same rights to use of the decks of the good ship *Earth* as any other man. And cooperative industry—cooperative farming, cooperative manufacturing replacing the wage system—will furnish the capital, the engineering skill, the sanitation and the willingness to wait, necessary to the reclamation of those

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wide and overgrown regions which present problems too difficult for the unaided man.

In that day, the valleys of the Congo, the Niger, the Upper Nile, and the Zambeze—the whole interior plateau of Africa—will hold more happy people than Europe ever possessed, and the civilization will outshine that of Carthage or ancient Egypt, or of the Moors, or of present-day Europe or America.

And the Amazon, the Orinoco and the La Plata will carry commerce between the densest populations in the world. There are areas greater than half a dozen Texases along those rivers where not the highest wages will now tempt even the natives to go for rubber, the conditions are so lethal. All that will be cured. Science, democracy and cooperative industry will make of Brazil and her neighbor states the beautiful and prolific home of more people than now exist on earth. The vacant spaces there are greater than the whole of the United States and naturally richer than the Mississippi Valley.

In those days, the Caribbean and the Gulf

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of Mexico will carry the busiest commerce in the world, perhaps, for across them will lie ferries from the South American and Central American ports to the West Indies, and our southern states. The Mississippi Valley and the valley of the Amazon will fill those seas with shipping, and drop wealth and plenty on all shores.

To the accomplishment of this future the passengers are now almost ready to address their efforts. We have the science—Goethals and Gorgas have shown us that. To-morrow will bring the democracy and the cooperative commonwealth, with the right to the use of the good ship *Earth* assured to every passenger—no matter how humble.

CHAPTER VIII

THE IRON AGE—AND THEN?

NOW that we think of it, every one of us must see that it's our business if the supplies for the maintenance of the passengers on the good ship *Earth* are in danger of running out. It's everybody's business, no matter who has the paper title to the supplies. For everybody is a passenger, and the descendants of everybody must be passengers.

The supply of coal is absolutely essential to civilization. Mankind in their present numbers can not be supported without its heat, and the work it does. The coal will last much longer than it would otherwise do, because in burning it we fill the air with carbon dioxide which in a few hundred years will cover all countries like the glass of a greenhouse, and make the climate of the ship warmer than now. So we shall not need to burn so much coal per capita.

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But there is another necessary of life in the bunkers of the ship which must be used with coal if civilization is to be maintained. It is iron. As steel, and under its own title, this metal gives name to our epoch—the Iron Age or the Age of Steel. Think of a world without iron—and except in a small way the world was practically without it, just a few generations back. No factories. No engines. No motor-cars. No watches. No effective tools. No nails. No bolts. No railways. No telegraph. No telephone. No sky-scrapers. No truss bridges. No typewriters. No steel pens. No printing presses. No reapers. No threshers. No cotton gins. No machine-made shoes or factory cloth, or machine-made anything. No guns. No battle-ships. No real ships of any sort, not even sailing vessels. No stoves or furnaces. No steam heat. No chains. No ropes—for metal machinery is used in making them. No cordage or thread of any sort save hand-twisted strings. No needles. No sewing-machines. No pianos. No saws, and therefore no lumber. No houses—only caves

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or huts. No gasoline or kerosene—for the petroleum business is based on iron pipes and iron machinery. No gas. No ice in summer. No exhaustion of the soil, through agriculture. No waste of coal by mining. No coal. No wastage of oil or natural gas. No whale oil, even. No fish-hooks, save bone ones. No denudation of forests through cutting, by reason of lack of axes. No conservation problem. No civilization. Nobody to write essays like this about the good ship *Earth*. Nobody able to see the questions. This is indeed the Age of Iron, and coal is the agent by which alone it can be thawed for use.

Of necessity I speak of the iron in the bunkers of our *Zeppelin* as it careers through space, as "ours." I hope in doing so I do not offend Judge Gary of the United States Steel Corporation. Once I spoke of that Colonel North who believed himself to have the nitrogen of the world reduced to possession in the nitrate beds of Chili so effectively that his descendants would have the power to starve our descendants if they chose. Science found a

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c way out of the North clutches. Who shall
10 show us a way out of the clutches of Judge
r Gary of the United States Steel Corporation?
2 For he—or rather his immortal entity the cor-
0 poration itself—is the Colonel North of Iron.

Fellow passengers on a wild air-ship named
the *Earth!* Our *Zeppelin* can not stop to take
on supplies—therefore consider this:

Most of our iron now available is in the
Lake Superior bunkers—the supplies for the
steel and iron works on the lakes and in the
Pittsburgh district come from there—Gary,
South Chicago, Milwaukee, Detroit, Buffalo,
Cleveland, Conneaut, Lorain and the rest.
These stores, amounting to 1,500,000,000 tons,
are owned mostly by Judge Gary's immortal
entity—which we created by law. In the
southern iron bins God has stored almost twice
as much—Andrew Carnegie thinks about
2,500,000,000 tons—and the best of this the
entity picked up one stormy day in 1907 when
the president let Gary have the Tennessee
Coal and Iron Company—to prevent a panic!
Altogether we have in the United States about

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10,000,000,000 tons of iron, which is worth taking into account. That's what the Laird of Skibo thinks—but he also says that the ore bodies when worked out usually fall short of the estimates.

There is no reason to think we shall find any great supply to add to these—not in the United States. Canada is a promising place to search, and in the unexplored mountains of the other continents a great deal may be found—but to depend on such a thing is like throwing found money to the dogs in the confident expectation of picking up treasure-trove before it's gone. Germany and Britain and Sweden have the only other supplies comparable to ours—though Cuba and Brazil have immense deposits—but they do not relieve the anxieties much, of a passenger who cares what becomes of the folk on board.

Now without any increase in the rate of mining, the known supply in the Lake Superior region will give out within thirty years. Judge Gary's entity will empty those bunkers. By 1938 half the workable ore in

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this country will be gone—and all the time Sweden, Britain and Germany will be eating up their supply, and then, resorting to the poorer ores, the work will go on, until by the year 2000 our supply will be gone.

I think the case is one that demands attention on the part of those who expect to leave descendants—or who care about the descendants of others—and that ought to take in nearly everybody.

We as a race should see to it that iron is saved by all possible means. For this reason, if for no other, we should provide for the carrying of freight on natural or artificial waterways, so as to prevent the loss of iron by the wearing out of steel rails in carrying an unnecessary amount of traffic. It is the cheapest way of carrying freight, anyhow. More waterways, and less spending of iron on railways. And it would save half the coal bill for transportation, too—thus easing up the emptying of the coal bunkers.

We should use concrete for all erections for which it is adapted—for there is cement and

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stone in plenty for all ages. The next age should be the Age of Concrete.

We should stop building battle-ships.

Think of robbing the bunkers filled by the Master who built and launched the ship with things necessary to the highest good of the passengers, and of making the goods over into murder-factories like war-ships! And the war-ship industry is what keeps a lot of steam-shovels at work scooping out our iron, day after day, year after year. Imagine the passengers on any vessel using the supplies as weapons with which to kill one another.

Then we should see to it that all iron when worn out is saved, worked up into new forms and used instead of iron newly-taken from the earth. For iron, unlike coal, is not limited to one occasion of use. It lasts. Probably as the store in use increases, the need for digging it out of the bunkers will lessen. Let us hope so. But those steel ships sunk in war—they are lost forever! Let us stop wasting our iron on war-ships!

For, be as optimistic as we will, we should

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remember that only two of the five continents are at all well supplied with railways, and that when the two-thirds of the passengers who do not mine iron, or use many machines, really wake up, we may face an iron famine, which will endanger civilization itself.

CHAPTER IX

OUR WORLD-WIDE METAL OF WORSHIP—GOLD

THERE are other metals in the bunkers which we should be sorry to do without. Copper is immensely important—and when we come to the work of using all our water-power to save the depletion of the coal in the ground, we shall need to use a great deal more of copper. Therefore, it would be a sensible deprivation to all of us if the supply of copper were to be exhausted. So with zinc, which is needed for utensils, for the preservation of iron and steel by galvanizing, as an alloy of copper in the making of that very useful metal, brass, and for paint. Lead is the basis of a very important industry, is widely consumed as paint, and is almost essential to many kinds of construction which we should scarcely know how to dispense with. And even the new metal, aluminum, and manganese, vanadium, mercury and many more,

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mostly with names ending in "um," from the precious platinum to the unfamiliar molybdenum, are all useful, and yearly becoming more so as we find out more about their properties—all are important; but we need not worry about the exhaustion of our stores of these.

We need not worry—because they are not so essential to civilization as are iron and coal; nor to life, as is the soil. We need not worry for the additional reason that the same moral uplift that carries us to the height of looking after the iron and coal and forests and soil, will bring us to the point of looking after these subordinate good things placed in the bunkers of the good ship *Earth* for the use of all the passengers alike.

But I must mention two metals because of their wonderful interest to the world for the reason that they have been taken as measures of value for other commodities. Though not extraordinarily useful in themselves, they exert an influence upon our prosperity which would be incomprehensible to a person brought up outside their sway. I mean silver and gold.

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These metals are useful—in fact, if they were plentiful, they would take the place of the baser metals in many of the arts. As in the case with zinc, copper, lead, nickel, platinum and other of the rarer metals, there is no way of telling how much of them the earth contains. We keep continually looking for them and the supply varies from century to century as we have good luck or bad luck. When Columbus discovered America, he led the way to the mines and gold and silver treasures of Mexico and Peru. For a hundred and fifty years the precious stream flowed into the world's strong boxes at a rate never before equaled. Then it dwindled. With the opening of the mines of California, the fountains were again set flowing. Australia liberated her great output. Then came other new "finds" in the Rocky Mountain regions, and in South Africa furnishing a tonnage of gold equal to any of these. Lastly comes Alaska. And all the while, the science of the world has labored to make the methods of extraction more efficient—until the output

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of gold and silver has become greater than ever before, and seems to promise a continuous supply.

Now this has a great influence on prosperity, strange to say. For gold and silver, owing to their beauty, have been for ages devoted more to the processes of hoarding than of consuming. It is as if the squirrels paid so much attention to the hoarding of nuts as to forget that the real object of saving is eating. We human squirrels do eat gold and silver—when we consume them in the arts—but mostly we have always hoarded them up in bars or ingots or round pieces called coins, and by this hoarding have created a permanent scarcity of them which appears to have a great deal of effect upon their value as compared with other things of value. These gold and silver nuts we human squirrels store in mints and national treasuries and banks and safe-deposit vaults and use them as things by which to measure the value of all other commodities.

In past ages gold and silver were both

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used and still are in some countries. But latterly the world, at the request of the financiers, has rapidly abandoned silver as a measure of value and adopted gold. I think the feeling of the bankers was that by the use of gold alone the value-measure would not be so apt to grow small as if both gold and silver were used. Financiers are people who have debts due them, and these debts are promises to pay a certain number of dollars, pounds, copecks, marks, yen or doubloons, at some time in the future. These denominations of money were all by law equal to so much weight of gold or silver. When the double standard was in effect, the debtors would, of course, pay in the one that happened to be the cheapest. The financiers put in effect their schemes in the double standard countries to adopt the single gold standard, because it looked as if silver was going to be so plentiful that it would displace gold entirely. Hence the "cross of gold and crown of thorns" speech in '96 and the "crime of '73" luridly described in many campaigns.

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Now a dollar's worth under the gold standard, is the value of the number of grains of gold in a legal dollar. If gold should get as plenty as mud, one could still weigh out the same number of grains of it for a dollar to one's creditor, as now, and take up his note promising to pay a dollar. If a region were discovered where gold could be mined in unlimited quantities with steam-shovels as is iron in the Lake Superior country, everybody could pay his debts easily—it would be equivalent to a universal act of bankruptcy. That is, a gold dollar would not exchange for more cloth, lumber, meat, wheat or other commodity than would an iron washer of the same weight; and the producers of other commodities besides gold would be able to get gold enough for a load of hogs—for instance—to pay off the mortgage on the farm. Prices, as measured in the now base metal, gold, would go kiting as high as they did in the south as measured in the credit of the confederacy when it depreciated.

Now, while we have not found any such

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mountain of gold, we are producing so much that it is depreciating as compared with other things. In 1907, in all the world there was gold to the amount of about seven billions of dollars. Half of that had been mined in the previous ten years, and the other half in all the previous history of the world.

Just think of it—as much in a single decade as in all the time since Solomon went into the market for gold for his temple! No wonder the dollar won't buy much! Now the great low-grade silver-standard nations like those of South America, Mexico, India and China are most of them trying to place themselves on the gold standard, and are absorbing this new gold in an astonishing way; but when their wants are satisfied, if the gold keeps pouring in, we shall find that we squirrels have piled up so many nuts that their value is going down tremendously. We shall have higher prices, increased cost of living—increasing faster and faster for years. Laborers will be obliged to struggle harder and harder to keep their pay up to the living wage

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scale, debtors will be able to pay their debts easier and easier, there will be more labor trouble, more freedom from debt, more turbulent conditions than we have ever seen—and I believe greater actual prosperity, even if more grief—all because the passengers are taking from the bunkers a great deal of metal which is not very useful, but which is universally worshiped, and which is used as a measure of value.

It is as if wages and prices and debts were all payable in cloth measured by an india-rubber yardstick, which were growing shorter all the time. Good for debtors, bad for wages, and sure to boost prices.

CHAPTER X

"MULTIPLY AND REPLENISH THE EARTH"

I HAVE spoken in these chapters of new lands to which man may go to support increased population. Let us see if these lands will suffice. One of the funniest stories of these times of ours is that written by Ellis Parker Butler, entitled *Pigs is Pigs*. It relates to the troubles of a rural expressman, who kept all the rules of the company as to taking care of a crate of prolific guinea-pigs, while unraveling the red tape of a dispute over the rate.

Long before the correspondence was ended, the office, the freight house, the platform and the surrounding city blocks were full of guinea-pigs. There was famine in all the things eaten by guinea-pigs. And the young pigs were arriving by Nature's own express line, in hourly consignments, each greater

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than the original one. In another month of such increase the guinea-pigs would have been knee-deep in the streets.

This humorous story illustrates strikingly the most wonderful, the most momentous fact about living things—embarked on our air-ship *Earth*—their tendency to multiply. In view of the fact that *we* are living things, that *we* have this same tendency to multiply, and that deck room is already very valuable, let us consider the so-called command, "Multiply and replenish the earth."

The first plants and the first animals were one-celled little bags of protoplasm. The long-shaped ones pinched themselves in two in the middle, and each became two, and so on. The round ones shoved out arms like snails' horns, and these horns pinched off near the parent, and went off as independent organisms, and thus multiplied. Some threw out buds, which separated from the parent, or dropped off and lived on. Many peculiar ways of multiplication were developed—but

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the living things did what no non-living things had ever done—they multiplied. The most beautiful and most dreadful operation of life was set going.

When the higher plants developed they multiplied by fruits and seeds. They developed ways for these fruits and seeds to live over winter when the parent died, and to be scattered, and for the plant to persist by a thousand ways. And among these higher plants, the crucial fact of all facts—*sex*—developed. The young plant was made up of the union of the mother-cell and the father-cell—a new individual organism made of the union of cells from two parent individual organisms. Another fateful step!

The multiplication of the lower animals was accomplished—and still is—by ways quite similar in simplicity—splitting, budding and the like. And with animals as with plants, as soon as evolution produced species a little advanced above the lowest, the fact of sex developed—the greatest fact of life.

Among animals as well as among plants,

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save in the lowest forms, the new individual organisms is made up of the union of cells from two parent organisms. In this fact lies more of the mystery of life—heredity, variation, love—material, paternal, conjugal, platonic—jealousy, poetry, religion, the family, the clan, the state, the nation—a thousand million great things—than in any other fact in the universe.

The problems of sex should be studied, not sneered at; looked at reverently, not giggled at; faced soberly and respectfully, not blinked and hidden and dodged. For in the problems of sex lie the great riddles confronting all the passengers on the good ship *Earth*.

All animals and all plants multiply—or tend to do so—to the very limits of the capacity of the earth to give them food and space. Just now, I am not discussing this tendency in man—if it exists—I shall come to that later. But all other animals do, and all plants.

The smaller and simpler species multiply faster than do the larger and more complex. The elephant is thirty years old before it

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brings forth its first solitary young, while animalcules so small as to be microscopic are able to multiply from a single pair to the number of 170,000,000,000 in four days. Yet the elephant and the animalcule alike obey the imperative command to "multiply and replenish the earth"—just as fast and just as far as the earth's conditions will permit. The oak tree is found almost all over the earth—though it increases more slowly than many other plants, it lives a thousand years. The smaller wheat plant, if given space and plant food, would spread all over the surface of the earth while the oak was getting ready to bear its first acorn—but the wheat plant does not occupy more of the decks of the good ship *Earth* than the oak, for all that—or would not if left unaided in the struggle. Both increase to the limits which their food and their enemies will allow.

That green rash which breaks out all over the decks of our good ship *Earth*, called vegetation, is then, composed of an innumerable host of warring plant-forms. Each tries

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to crowd the other out. The fittest survive. Some produce innumerable seeds, and trust to chance for the planting thereof. Some live by thorns. Some stick their seeds fast to animals. Some produce good fruit with hard seeds inside so that birds and animals will scatter them. The ones with the most successful tricks survive.

So with animals. Each multiplies to the limits allowed by its food-supply, and its diseases and its enemies.

There are always other animals whose existence and multiplication are at the expense of any animal in question. There are pests and parasites. And there is the question of getting food. If food is plenty, and enemies are scarce, and diseases and pests are absent, the animal increases—whether it be giraffe or dodo or sparrow. If the food is scarce, or the enemies successful, or the diseases and pests bad, the race decreases. There is always a tide in the affairs of animals and plants as in those of men—it either ebbs or flows. Sometimes it ebbs until a race is wiped out—like

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the fossil animals we read of and see in the museums: the dodo just spoken of, and the passenger pigeon which many people now living have seen, but which is no more. This ebbing and flowing of the racial tide is called a "moving equilibrium." It is like the tug of war when two sides pull at a rope—each side is always losing—or gaining—until one definitely wins.

Enemies keep the race from increasing—that is war.

Pests and diseases prey on the race and keep down its numbers—that is pestilence.

Food supply grows too small for the multiplied hosts and they starve—that is famine.

War, pestilence, famine! These are the genii with which Nature keeps her balance even between the warring species of both plants and animals. Without war, pestilence and famine, there is not one species which would not eventually ruthlessly crowd everything else off the earth, driven as they all are by the irresistible urge to multiply.

But man is an animal—is he exempt from

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the rule? Did God place him on this huge round *Zeppelin* of the skies, and decree that he, too, must multiply until the good ship *Earth* can no longer nourish him, and therefore unless he is decimated by war, he shall fall by the sickle of pestilence, and if he escapes war and pestilence, that poverty must destroy him by famine?

"Is this the thing the Lord God made, and
gave
To have dominion over land and sea?"

And is this the sort of "dominion" He gave?

War, pestilence and famine—these three are essential to the keeping in check of the multiplication of all plants and animals. War with the plants and animals which struggle with them for food and space and which prey upon them—for there are plants that prey upon other plants, and even on animals. Pestilence—which is merely the inroads of other plants and animals too small to be seen, and of weaknesses of constitution and their effects. Famine—which is the failure of a part of the species to get food.

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These three check all organisms in their conquering march to possess the earth. They *must* in the nature of things. For if war fail, and pestilence withhold its stroke, the myriads will grow so great that famine will come as a matter of course.

It is a law of nature. It applies to all living things, unless man be the solitary exception.

There have been those, like Malthus, Spencer and their school, who have insisted upon war, pestilence and famine among men as a part of the natural order owing to the tendency of human beings to multiply beyond the resources of the earth to afford them means of living.

There are many others who, lacking the fortitude to look the predicament of man squarely in the face, have said: "Oh! There's a way, and always will be a way for all men to live. Why, the state of Texas would support the entire population of the world, if it had to! Let's be optimistic!"

Others there have been, and of these Henry

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George is the best example, who, looking the case fairly in the face, have denied the tendency of the human race to multiply beyond the limits of subsistence, and Mr. George has even suggested that it does not increase in numbers in the long run at all. He denies that density of population has ever in the world up to this time necessarily produced poverty. And until it does so produce poverty he refuses to admit the inherent inevitability of the sweeping off of redundant population by either war or pestilence.

Mèn of the George school have made the strongest case which has been made against the argument that man, an animal, like all other living beings, tends to multiply, if given a chance, to the limits of subsistence. And their appeal to Divine justice, and their defense of God against His alleged detractors has been perhaps the most impressive of their appeals to the world.

"Has God," they say, "more inhuman than the cruelest ship-owner, placed on the ship *Earth* a potential population which the sup-

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plies are inadequate to feed? Has He so arranged matters that if these human beings escape pestilence, and in obedience to the precepts of love refrain from killing one another, they must die of want? No blackguard on the water-front would do such a thing! God has not done it!"

In spite of the tremendous force of this argument, let us look at it. For there is tremendous force in the principle of multiplication, too. Let us first ask ourselves, Does the race tend to increase? And does it actually increase?

It has been pointed out that in the old nations—Egypt, Assyria, Babylon, Medo-Persia—there were immense populations. There were; but we have no means of determining what they were. There is no reason to believe, though, that they were as great as our populations of to-day—or that the increase the world over was ever so rapid as now. Within the past century, the world has come under observation to an unprecedented degree, and we

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know as never before what the roster of the passengers amounts to.

Gibbon calculates the population of the Roman Empire at its height at 120,000,000. The regions then included in the Roman Empire are now more than twice as populous. Five hundred years ago, Europe had probably about 50,000,000 people; she now has 380,000,000. North America has a population of 100,000,000 drawn from Europe and natural increase, in the main, which she has gained in a hundred years, save about 5,000,000.

Whatever may have been the state of knowledge in the past, there is now no lack of proof that the tendency of population is to increase. We can see a startling increase in our day.

This is an age in which famines are much less frequent than of old, and wars, while frequent, do not destroy such large populations as formerly. In the civilized nations sanitation and scientific progress are reducing disease to the point of greatly weakening the factor of pestilence in checking increase.

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In 1882, the total population of the world, according to statistics which while not exact, are reasonably so, was in round numbers 1,433,000,000. In 1907 it had increased to 1,606,000,000. The increase, in exacter figures, in the twenty-five years was 172,738,000.

Thus in twenty-five years, we passengers on the good ship *Earth* increased by more than the whole population of the western hemisphere! We grew in numbers by as many people as twice the population of the United States at the beginning of the period.

If it were really a ship, and the passenger list were growing at that rate, would you not feel anxious if you were on board and could not get off? And yet, that is the situation.

At this rate in twenty years from now, there will be 1,767,000,000 on board; in forty-five years, 1,943,000,000; in seventy years, 2,138,000,000; in five hundred years 10,000,000,000; and in six hundred years, we shall be making a growth in the number of people every quarter of a century, equal to the whole population of the globe in the year 1900!

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Some of you may have smiled at the idea I have developed that the warming of the climate of the earth by the carbonic acid gas in the air may, and probably will, bring into use as good farming countries millions of square miles now too cold. But if this increase keeps on, shall we not need it? And shall we not need to save the phosphorus and potash and nitrogen of the soil, and haul on all we can find, and save the washing of the soil, and conserve the forests, and look after the nitrates and the coal?

Does it not look as if the Malthusians and Spencerians are right? Are not war, pestilence and famine necessary? If they do not check this multiplication, what will?

After all, is not God mocked?

These things demand further consideration.

Increase of population is usually regarded as a good thing. We Americans are especially prone to think of a growing population as a great thing for the country. We strive to attract people to our states, our cities, our towns. We stuff local census

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figures sometimes to show growth even when we have had none. We hide our heads in shame when the statistics show a loss of population, or a gain supposed to be too small.

This excessive esteem for mere numerical increase arises from the fact that our deck room on the good ship *Earth* a hundred years ago was poor in people and rich in space which hungered for them. There were few passengers and much deck room. Life on board was poor and starved because there were so few people that they could not well help one another, nor build up a full and complete life. It is much better in most ways in America with a hundred millions than it was with five.

And it really has been in some way discreditable to an American state or city or town not to grow. It meant that the soil was poor, or the government was bad, or the people disagreeable. So shame is the proper feeling in the one case and regret in the other at the failure of population to increase.

But we must not get into the habit of thinking because the ship once had too few passen-

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gers on a part of the decks shut off from the others by water, and that a hundred years ago, that the steady increase of numbers on the part of the human race—the passengers on the great terrestrial air-ship *Earth*—is good, or a salutary thing, no matter what any one may say.

In the quarter of a century succeeding 1882 the population of the *Earth* increased one-eighth. At this rate, in five hundred years there will be ten billions of us. In six hundred years our increase every twenty-five years will be more than the whole number of us in 1882!

And there is every reason to believe that never in history were the passengers multiplying as fast as now.

It behooves us to consider what happens when populations get too dense.

Statistics show that Belgium is more thickly peopled than any other nation, but such statistics mean nothing. Belgium is mainly a cluster of cities, and a city is not self-sustaining. It is one end only of the equation, one

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member of the proportion. Belgium, Holland, Manhattan and the island of Great Britain are places where people are gathered together to do certain things; and those on farms, in ships, in railway cars, in wildernesses, and on sheep ranges and cattle ranches, and in forests, who are coworkers with these city dwellers to make up a complete industrial community, should be taken into account when density of population is reckoned.

Cheyenne, Wyoming, is densely populated, but the Cheyenne territory is sparse of settlers. When the crew of a ship gathers to furl the sails, the yards are thickly populated; but the ship may be undermanned. So, while Belgium, Holland, Great Britain, Manhattan and Cheyenne may some of them be overpopulated, they are not all so, and may none of them be. For they are the places where the passengers—who are also the crew—of the good ship *Earth* are gathered to work the vessel—for mutual aid and cooperation.

To find the places where the *Earth* is really over-populated, one must go to the Orient—to

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China, Japan, Korea and India. And here, where the population presses on subsistence, we find what we shall one day find in these dear states of ours, if the universal law of multiplication goes on unchecked. We find squalor unspeakable, misery indescribable, fear in the heart of every man, and four-fifths of the thoughts of every mind and of the utterances of every mouth related to food!

Extremes meet. When animal life began, it began in the ameba, an animal which was all stomach. And in the twentieth century, where human life has followed the line of animal increase to the very limit, man gravitates back to the point of losing "the upward looking and the light," and becoming again a creature, eighty per cent. of whose intellectual activities are monopolized by the demands of his hunger. He has again become for all human purposes, an embodied stomach. In all the list of tragedies there is none so awful.

In these crowded spaces, meat is scarcely ever eaten, not because of any belief in veg-

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etarianism, but from the fact that more than five times as many people can be fed from the land with vegetable food as with meats. Flesh and blood are so cheap that they drive out steam and steel in such work as sinking piles and carrying burdens. Animals can not be used in tillage where men are so plentiful. A man will carry a ton of canal mud for fertilizer five hundred feet for three and a half cents. For this he can buy only eight eggs, or five ounces of pork—so it is clear that his life can not be supported on animal food at such wages. The three and a half cents will therefore be spent for ten ounces of potatoes, or six pounds of clover to be cooked and eaten, or two and a half pounds of beans, or a pound and a half of peanuts, or three pounds of shelled corn, or a pound of bean curd, or, as is, of course, usually the case, for a mixture of these.

“Incredibly small,” says Doctor Ross, “are the portions prepared for sale by the huckster. Two cubic inches of bean curd, four walnuts, five peanuts, fifteen roasted chestnuts, twenty

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melon seeds—make a portion.” No wonder that in six weeks he saw only one man reading—and *he* had fallen asleep over his book. No wonder that instead of asking a chance-met person how he makes his living, the Chinese asks, “How do you get through the day!”

No wonder that girl babies are exposed and allowed to die. Who shall say that this is not the truest mercy? No wonder that the chief magistrate of a Chinese city on being told that the infection of bubonic plague could be kept out, asked why it *should* be kept out, in view of the fact that there are too many people! The Chinese, their multiplication unchecked by the wars they have found out how to avoid, may be excused if they choose pestilence rather than famine.

I know that many readers will say that this poverty must come from the fact that the people are robbed by the aristocracy, or by the monopolies, or by the government, or that they do not make the best use of their resources—or that there is some other reason for this supremely dreadful condition of affairs than

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mere pressure of numbers on the possibilities of food production. If God is not to be accused of the supreme cruelty of placing more passengers on this good ship *Earth* than she can carry, then some other reason must be found for this poverty, you say?

That question—which carries us to the greatest of all human questions—must be glanced at hereafter. Just now it is well to remember that increase of population is the greatest evil by which the world is threatened.

Let us assume a pair of guinea-pigs in the Ark, and her voyage so long as to bring into play the forces that filled with young guinea-pigs the life and the vicinity of the hero of *Pigs is Pigs*.

This would have presented a puzzling problem to our grandsire Noah, would it not? We can imagine the venerable prophet troubled at the growing scourge of guinea-pigs. The provisions would have been inadequate for them.

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But suppose the Noah family themselves had so multiplied? Would the case have been any better than if the famine had come from guinea-pigs, lions, tigers or serpents? Would it not have been the worst case possible, if the increase had been in human beings? For guinea-pigs, lions, tigers or serpents could have been killed and thrown overboard—or eaten; while against the thinning out of the redundant passengers, there was set the commandment, "Thou shalt not kill."

I have been trying to get some light on the very problem I have imagined as confronting the Noah family. For our good ship *Earth* seems to be in some of her decks already overpopulated—not with properly killable brute beasts, but with men and women and children. This over-population, I have suggested, is the cause of the poverty of the masses in China, Japan and other Oriental parts. Many readers protest, saying: "If poverty comes from the irresistible forces of nature urging living beings to multiply—forces which rule man as imperiously as brutes and plants, then why

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try to justify the ways of God to man, or to cure poverty? Why not let loose the dogs of war, and close the medical research laboratories and the health bureaus? Is it not better to keep the passengers thinned out by war, than for them to perish by pestilence? And is not quick decimation by pestilence better than that slow killing of the soul as well as the body which comes from poverty?"

These are questions which can not be evaded, but must be met. I hope to meet them fairly in good time.

The poverty of the masses in the Orient is full of awful interest to us—of awful warning and of a sort of fearful hope. It shows us the dread condition which comes from over-population—which is a matter for fear. It informs us of the long, long road we have to travel before we reach that point—which is food for hope—hope that we may on the journey find some way out of the toils of our own fecundity.

Those who say that such poverty as we Caucasians now suffer from is in no manner caused

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by over-population are right. We have in these United States still more than twenty acres for the sustenance of every person. In Japan there is but a third of an acre. Some Japanese, however, are supported by trade and manufactures, and draw their support from other acres than those of Japan. But in the Shangtung province of China, Doctor King found lands supporting 3,840 people of a strictly rural population to the square mile, or 240 to a forty-acre farm. The island of Chung-ming, with 270 square miles, has 3,700 people to the square mile, and only one large city any part of whose people could draw sustenance from outside the island. It is safe to say, therefore, that until our population doubles once or twice, such poverty as we have must be laid to other doors than that of the increase of population.

Even China and Japan may by collective governmental energy bring into use lands which the very agony of individual struggle for existence has not been able to utilize. Engineering and flood prevention may make room for

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tens of millions more in China. Mining of fertilizing rocks may increase crops, and again bring in exhausted and denuded areas. Japan, if all hillside lands with a slope of fifteen degrees or less are brought under tillage, may add sixty-five per cent. to her farmed acreage, and thus allow an increase of population to a hundred millions. But no discovery of science can, so far as can be seen, take from the soil what is not in it, nor enable agriculture to make food of anything but plants fed from the plant food in the soil. So that poverty is sure to recur, if the present birth-rate of these nations keeps up, no matter if the whole earth were theirs. They are not made poor by their oppressors, but by their birth-rate.

It might be possible to make some show of denial of this as to the Japanese; for they have most of the paraphernalia of industrial robbery and exploitation. But in the Hoang-Ho Valley of China, and especially in such fertile areas as the Chengtu plain, where from three to four thousand people live on each square mile, the law of the pressure of population on

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substance caused by redundancy of population is in stark, plain, full operation.

"Are not these people in some way robbed?" I asked of Professor E. A. Ross. "The percentage of production which goes to the non-producers," said he, "can not be more than two or three per cent." Wipe out even that small concession to parasitic hands, and the birth-rate would restore poverty in its original awfulness in a year. In his book, *The Changing Chinese*, he repeats this. "Nor," says he, "is the lot of the masses due to exploitation. In the cities there is a sprinkling of rich, but out in the provinces one may travel for weeks and see no sign of a wealthy class—no mansion or fine country place, no equipage befitting the rich. There are great stretches of fertile agricultural country where the struggle for existence is stern and yet the cultivator owns his land and implements and pays tribute to no man."

The long strife with nature for subsistence has stripped off even the parasite from the shoulders of these sober, honest and thrifty

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men. There is no surplus on which the non-worker can live. Farming is so perfect that even the greatest agricultural expert of our time, the late F. H. King, could see no way in which our science can materially help them. Our best agricultural practise seems barbarous compared with theirs. If good farming, good soil, feverish and unremitting industry, practical freedom from taxes, and the enjoyment of practically all the produce of their labor could keep them from poverty, these people would not be poor. Yet they are so poor that eight out of ten of their children die in infancy. The land can not support the increase.

So, while we need not yet lay any of our western poverty to pressure of population, we should remember that this awful evil seems to be approaching. Our population has grown from 38,000,000, in 1870, to 92,000,000; Japan's in the same time from 33,000,000 to 50,000,000; Russia's from 73,000,000 to 160,000,000; Germany's from 41,000,000 to 64,000,000; Great Britain's from 31,000,000 to 45,000,000; Italy's from 26,000,000 to 34,-

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000,000; Austria Hungary's from 35,000,000 to 51,000,000; while even France, whose population increases more slowly than that of any other nation, has grown from 36,000,000 to 39,000,000.

The urge to multiply bears man on to the same goal, apparently, as the sparrow and the worm—to the exhaustion of subsistence. Doctor W J McGee has made calculations that in three hundred years the United States will have acquired a population of a billion—and reached the limit. The limit means conditions like those in Chengtu. Let the passengers on the good ship *Earth* consider these things!

CHAPTER XI

THE KIND OF PASSENGERS THAT MULTIPLY

FATHER NOAH, on the Ark, fortunately had a voyage so short that the tendency of his live stock—human and brute—to swarm and increase in numbers, probably gave him no trouble.

But we on board the good ship *Earth* are doomed to a voyage of *infinite* length. It is an awful truth that every living thing on board tends to multiply, and that plants and animals all do multiply until their further increase is stopped by lack of food—which is famine; by encroachments on their increasing numbers—which is war, or by parasites and pests—which is pestilence.

We know, too, that man tends to multiply—the Noah family already numbers thirty-two people to every square mile of land on our old Ark, *Earth*, counting in desert, swamp, rock and sand, as well as arable.

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And this human swarm is growing faster than ever. There are great authorities who declare that war, pestilence and famine are as inherent in the frame of human society, as in that of wolves, rabbits, worms and fishes.

All we can say is that if this is not true, man is the only living thing of which it is not true.

But is it fair to say of a just God that He has placed us here, with strictly limited supplies and the urge upon us to multiply so coercive that it has filled the Orient with three thousand people to the square mile?

Two of the most virile minds in the world are Theodore Roosevelt and Rudyard Kipling. In many ways they are alike. Both are something in the Berserker line—stark savage men, each with a bushel of brains. Each has his ideas on this matter of population—and they seem to be opposite ideas. In a recent story Kipling, prophesying of the year 2000, sees the population of the world decreasing to six hundred million, five hundred, and then to four hundred and fifty. "The planet," says one of his characters, "has taken

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all precautions against crowds for the past hundred years." "Anyhow," says another, "men live a century apiece on the average, now." "We are all rich and happy," says another, "because we are so few and live so long." In this story Kipling sees human powers so far increased that a girl runs a cultivator by means of an electric switch in the house. So, if I have got his meaning, prophecies Rudyard Kipling.

Roosevelt, on the other hand, seems to fear evil from a decreasing birth-rate. He cries out against what he calls race suicide. I do not think he has uttered his full thought in the premises, perhaps for reasons of policy. I suspect that there be people whom he would like to see having fewer children, and those whom he would fain see rear more.

This brings us passengers on the good ship *Earth* to a consideration of the kind of passengers who do multiply, and the sort, if any, who do not. If there is a sort which do not, are they better or worse passengers than those who do? If we are to stay on this spinning air-ship

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as it shoots through space—if we can not get off save by death, and if our descendants are to sail on after we have been absorbed back into the decks from which we rose, the question must be of interest. If we really think, must it not be the one of the most interesting of all questions?

The Chinese have an annual birth-rate of between fifty and sixty to the thousand. In Russia it is forty-nine. In French Canada it is probably equal to the Russian rate. In Japan it is only a little, if any, less. In Germany it is thirty-five. In German Austria and Spain it is thirty-four. In Italy, Holland and Finland it is about thirty-three. In Norway, Denmark, England, Scotland and Belgium it is about twenty-nine. In the United States as a whole it is probably about the same. In Australia and New Zealand it is about twenty-five. In Ireland it is twenty-three. In France it is twenty-one.

Look at it! Russians, Chinese, Japanese and such similar populations, already swarming as those of Hungary, growing like genera-

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tions of midges as compared with the Yankees, Irish, British, French and the British Colonials!

Note this, too—wherever there is a high average of intelligence, the birth-rate is low. This is true within the limits of every society. We must not imagine that all classes in Russia, China, Hungary, French Canada or elsewhere are so astonishingly prolific. We may be sure that there, as here, the huge families are found mainly in the tiny homes of the ignorant. Is there not here a glimpse of the two courses open to the world—widely disseminated high intelligence and a low birth-rate, as against a high birth-rate and general and widespread ignorance?

We are here looking into the very core of the riddle of the Sphinx.

It is of importance, too, to every passenger on the good ship *Earth* to take notice of the fact that while we are animals, the conditions which are favorable to the multiplication of all other animals do not seem to affect the human race in the same way. This is some-

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thing which we are only just beginning to realize. Herbert Spencer denied it. But the facts show that man in the conditions determining his tendency to multiply is different in some respects from all other animals.

All other animals multiply faster when they have plenty of food and adequate shelter—in other words, when they are in vigorous condition physically, and when life is easy. But look at the facts as to man.

Sir J. A. Baines says that in France “general well-being reaches probably a lower depth in the community than in any other part of Europe”—in other words, France has the highest general average of comfort. She has the lowest birth-rate in the world.

There are some special reasons for the low Irish birth-rate, but the principal ones are the high comparative intelligence and prosperity of the island.

The poorest people in North America north of the Spanish nations are the French Canadians, and the most illiterate—and their birth-rate is the highest. The thrifty and in-

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tellectual Yankees, of New England, probably have the lowest birth-rate on this continent.

The Boers, of South Africa, have a very high birth-rate and are very prosperous—but they are extremely ignorant.

The Russian peasants, degraded, ignorant, besotted, illiterate and poverty-stricken, are almost as prolific as the Chinese. The Hungarians belong to the Central European group of oppressed peasantries whose high birth-rate helps to keep them in bondage.

The Colonials, of New Zealand and Australia, are among the most intellectual and prosperous people embarked on the good ship *Earth*, and their babies scarcely suffice to keep their numbers good, though they have a continent to occupy.

After one of Colonel Roosevelt's outbursts against "race suicide," Mr. Dooley observed that "race suicide," like the tariff, is a local question. They might be troubled by it on the Lake Shore Drive, but it was the least of their worries on the Archey Road. So it is all over the world. The poor and the unedu-

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cated multiply. The well-to-do and the intellectual do not. China and Russia, French Canada and Japan are the Archey Roads of the world. Australia, Great Britain, France, the United States and the nations of Europe generally are its Lake Shore Drives. One of the deepest truths in human thought is in the old saying, "A poor man for children."

Maud Muller's case is one which shows the insight of the poet. In one couplet Whittier compresses the whole philosophy of population.

"She wedded a man unlearned and poor,
And many children played round her door."

This is more comprehensive than the maxim "A poor man for children;" for small families are the rule in many communities among the poor as well as the rich. But where the people are both ignorant—or "unlearned"—and poor, large families abound. The Boers are well-to-do, but they are very illiterate and unprogressive—and prolific. The French

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Canadians are not poor in the slum sense, perhaps, but they are not strivers after wealth as a race, still maintaining the happy-go-lucky attitude toward the rearing of children which we Yankees maintained when we had, as they have, a wilderness at our doors in which we might freely live. They are illiterate, and very prolific. The Russians and the Central European peasantry generally, are both poor and ignorant.

The rule is this. The simple life produces large families. The complex life cuts down the birth-rate. As the good ship *Earth* "spins down the ringing grooves of change", if human beings are not to make their lives on her decks a hell through the miseries of poverty, they must live more and more the complex life, and less and less the simple life. This is the solution of the riddle of population.

There must be no poverty. Some way must be found to eliminate the injustices which make the inequalities that doom so many millions, even in our sparsely peopled land, to lives

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of simple, stark, dead struggle for existence. Such a state of freedom from poverty is possible in the western world for ages to come, and if attained before the people are ground down into "the simple life" will forever save us from a swarming existence of poverty from which, once completely plunged into it, we shall have no way of escaping—fulfilling the sordid law of Malthus, and carrying us down into that "amorphous gulf," "that gulf of anarchy whose pit is hell." There must be a way found through which all men may escape from poverty.

The case of the simple life vs. the complex life is another way of stating the old struggle which Spencer describes of individuation vs. genesis. The complete, perfect and complex individual does not multiply as does the simple, small and limited individual. The house-fly is credited with the power to produce 199,000,000,000,000,000 of young in a season, if all her eggs hatch, and all her young go "unswatted." The very fact of size carries with it the gift of more complex life.

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The elephant is committed by his very weight to a struggle with gravity—he can not carry about such a body and keep it nourished, and still have left the vital force to multiply like the house-fly. So the birth-rate of the elephant is low and that of the house-fly high, just as one lives on a high plane, and the other on a low one.

Small birds breed faster than large ones of the same genus. The golden eagle has fewer young than does the sparrow hawk. The tapir is a slow breeder, while the peccary swarms. These things are not accidental. They inhere in the principles of biology. Organisms are restricted in producing progeny as soon as they begin to do anything else.

But no merely brute life compares in its capacity for becoming complex with human life. The bushman lives a simple life for a man, but the gorilla reduces existence to still lower terms.

Let us contrast the simple life of the Chinese peasant with that of a struggling American family. The American boy goes to school,

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the Chinese boy works—bowed down to serve the rice. The American boy goes to high school; the Chinese boy at the same age takes a wife, and becomes a father. He is repeatedly becoming a father, while the American boy goes to college, or spends years becoming “able to marry.” Out of a thousand American boys a great many will take up studies or apprenticeships or other complexities of life which will defer their marriages—and if they do not their sweethearts will. Nothing of the sort in China in one case in a hundred thousand.

The difference between Gladys and Tzi is even greater. Tzi has her feet bound and suffers the tortures of hell for years, and this is the only complexity entering into her life. At last it only makes life simpler and confines her more closely to her sole business of motherhood as it keeps her vegetating in the hovel she calls home. At thirteen she is given in marriage, and while Gladys is working through the grades at school, Tzi is having babies. If her husband is able he hires a wet

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nurse for the babies, so that Tzi may become a mother oftener.

Tzi and Ching marry in their early teens; Willie and Gladys wait—and in waiting may be change their minds. Tzi and Ching, living the simple life, couch in a hovel with their parents and relatives; Willie and Gladys must have a home of their own. Gladys's mother insists that her daughter "shall have a few years of just being a girl;" the mother of Tzi hands her over to the father of Tzi to give away to a husband who has never seen Tzi's face.

And when Willie and Gladys marry, they have their social work, their church work, and their clubs and societies to take care of; but Tzi and Ching have babies only—babies and awful grinding work. Willie and Gladys must have a piano; Tzi and Ching have babies. Willie and Gladys must have rugs and bathrooms and a bungalow at some lake. Tzi and Ching know nothing but work and babies. Willie and Gladys want to know something about this great universe of ours, they reach

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out after the stars, they delve into the mysteries of knowledge; but as for Tzi and Ching,

“Slaves of the wheel of labor, what to them
Are Plato and the swing of Pleiades?
What the long reaches of the peaks of song,
The rift of dawn, the reddening of the rose?”

Ross says of Tzi and Ching's country, stripped to the bare machinery of production as it is: “The founts of inspiration and poetry dry up, and life sinks to a dull sordid round of food-getting and begetting.”

And again, these variations are not accidental. Here also they inhere in the very principles of biology. All the things done by Willie and Gladys in addition to the simple labors of Ching and Tzi take time and vital force. Human beings, like animals, but to a degree infinitely greater, are inhibited from multiplying to the exact extent, on the average, to which they exercise their powers to do anything else. This must be so. It is possible for a horse to trot a mile in just a little more than two minutes. It is possible for the same horse to draw a ton. But it is not possible for

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the same horse to do the two things at the same time.

Jesus came to earth that we might have life, and that more abundantly. This must bring a more complex life, more needs, more gratifications, more desires. Like the daughters of the horse leech we cry, "Give, give!" to nature and to life. And this is right. Give us a more complex life, not a simpler one; better children, even though they be fewer; and women with unbound feet, unbound minds, with freedom to develop in every way, a freedom and development which will make their children great, whether they be many or not. Thus will the ship be saved from over-peopling.

This is the application to political economy of the universal law of the conflict between individuation and genesis. It reconciles the law of evolution with the law of justice, and transforms the evolutionary principle from a sentence of social death to a gospel, like that of the Nazarene, of "good tidings to the poor." It recognizes the truth in

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the doctrines of those who have preached diminishing returns, redundancy of population, the struggle for existence, and the survival of the fittest, as reasons for poverty. It takes cognizance of the truth in those other writings which assure us that there is something in man's mentality which takes him out of the operation of the Iron Statute of the universal tendency of all living things to out-multiply their means of living. It identifies that redemptive Something. It shows that in this respect, as in all others, man must work out his own salvation. He was naked, and clothed himself. He was shelterless, and he learned to build. He taught the beasts to give their increase for his food, the fields to bring forth for him. In all these cases man finds himself within some saving natural law as soon as he rises to its level. This principle of the conflict between individuation and genesis takes him out of the operation of the law of fecundity, as soon as he rises to the moral and intellectual heights to which, unless by his own sociological failure his development is frus-

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trated, he is destined. He rises above this law, not alone by any Malthusian "prudential" or "preventive" check on population; but by the force of natural law which works in plant and beast as well as in man. In the process of evolution, man steps upon the stage a savage, but with the complex life which half solves the great riddle. In civilized man, under conditions of justice, freedom and enlightenment, the law of multiplication gives way to the law of complex, full, manifold and absorbing life. Redundancy of offspring is supplanted by redundancy of life.

"Know ye not, brethren, (for I speak to them that know the law,) how that the law hath dominion over a man as long as he liveth? . . . But now we are delivered from the law, that being dead wherein we were held; that we should serve in newness of spirit, and not in the oldness of the letter."

CHAPTER XII

SEVEN PERILS OF HUMANITY—NUMBER ONE. THE MOHAMMEDAN PERIL

AS passengers on a ship which has no ports of call, the cliques, cabals, classes and divisions among the people aboard must be important. It was always so. For even in the days of old, the rise of a new dynasty in Asia filled the nations of Europe with fire and sword, by the mere ebb and flow of battle across the decks.

But now, we have learned to go to the remotest parts of the planet in vessels, each of which will carry an army; and we have supplemented the horse and camel with the train, the motor-car and the aeroplane. We have learned to go to other peoples in such wise—but we often forget that they also have learned to come to us. The good ship *Earth* can not be ever again the planet in which nations can

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live isolated lives. We are all in the same boat—and more and more we are driven to look upon the huge problem of life upon it as a single problem.

When one reads the story of sea adventure, he finds his first thrill in the description of the swarthy nondescript crew of Lascars, Malays, Kanakas and Portuguese. No matter how fair the skies or how favorable the breeze, the reader is aware that in another part of the ship lurks that crew, with knives in their belts and murder and mutiny in their hearts. But how about the swarthy crew on other parts of the decks, of the good ship *Earth*? Are affairs on this spinning *Zeppelin* on which we sail perfectly free from danger from them?

There are several questionable cliques of sinister aspect on board with us, and of these I shall now speak of one—the Mohammedan peril.

We who are at least nominally Christians, are prone to think that the religion founded by Mahomet 1,300 years ago is a dying or decadent one. No mistake was ever more egre-

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gious. Mohammedanism is making three converts to Christianity's one!

It is growing in Russia, where the alliance of the decadent absolutism of the czar with the dying Greek Catholic church leaves the field free for the missionaries of Islam. It is sweeping over Central Asia like an infection. It is spreading through the islands of the Pacific, where it already is the ruling religion in Sumatra, Java, Celebes, Borneo and some of our Philippines. It is wiping out paganism in Africa, where it seems bound to become the universal faith of the black race. It is conquering Abyssinia, that kingdom of blacks in which Christianity of a mongrel sort has fought back Islam for a thousand years.

Mohammedanism makes fighters of its converts. Its weakness and its strength lie in this fact. Italy can not conquer the Tripolitarians. She may finally kill them, but she can not make them submit.

Mohammedanism unites all the races of the faith in one brotherhood. Freemasons and knights of various orders take oaths of mutual

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aid but none of them clings to one another as do Mohammedans. Russia in Central Asia, England in Egypt and India, France in Tunis, and Spain in Morocco were all disturbed by the rage of Mohammedans against Christians when Italy attacked Tripoli.

The Mohammedan nations of the world possess 1,500,000 trained soldiers, armed with modern weapons. There are perhaps ten millions of first-class fighting men, fierce, brave as any men in the world, but untrained, who are ready to die happily in the cause of Islam against the hated unbelievers.

Mohammedanism is a religion of sex-indulgence, of temperance, of hate against all other faiths, and is based on the principle that it is right to kill those who refuse to accept the true religion as they fanatically believe theirs to be. Such a faith so held is a world-wide portent.

This faith is as strong now as ever it was. As strong as when the Mohammedans conquered Spain, and were kept from making us all Mohammedans by nothing but the tre-

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mendous genius in battle of Charles the Hammer, grandfather of Charlemagne, who beat them back in a seven days' battle at Tours, in which the Mohammedans left 375,000 dead on the field. They had already conquered all of Spain and half of France. This was twelve hundred years ago.

From that time, the Moslems were held back at the Pyrenees, and were finally expelled from Spain; but all the time they were fiercely beating at the other door of Europe. They wiped out the last vestige of the Byzantine Empire, which held them in check for more than a thousand years. From this we should learn that Mohammedanism never quits. Nine hundred years after Charles the Hammer broke them to pieces at Tours, John Sobieski, of Poland, and Prince Eugene, of Savoy—who fought beside Marlborough, of England, at Blenheim—saved Christendom a second time, by victories in a series of terrible battles in what is now the Christian empire of Austria.

When one of the Moorish officers in Spain

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kept for himself a beautiful maiden, Abder-Rahman his general put him to death for keeping a treasure which should have gone to the caliph—the head of the church. And when the Mohammedans took Spain, thirty thousand fair women were sent as a present to the caliph. The Turks of to-day are the same as those who stormed Constantinople in 1453. Their war on the Albanians just prior to the attack on Turkey by the Balkan Allies was the same fierce Mohammedan war. Still girls are the reward of valor. The Circassian maidens of 1912 find their market in the harems of Islam.

Only one thing keeps the Mohammedans from resuming their march to conquer the world for Islam. Not lack of numbers—there are 220,000,000 of them, the best soldiery of the world. No, it is lack of money and scientific knowledge. Time was when the Arabs were the best educated people in the world, and the Mohammedan court in Spain was for three hundred years the center of science, wealth and culture. The great world danger

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in Mohammedanism is that some genius will arise among these peoples who will bestow on them knowledge of the sciences and financial honesty and ability again. If that time comes before Mohammedan fanaticism is weakened by general and liberal education, we shall need all the Charles Martels, all the John Sobieskies, and all the Prince Eugenes which the rest of the world can muster, to keep the good ship *Earth* from passing under the blight of the most seductive and the most degrading superstition on earth—a faith which enslaves woman, flouts democracy, and knowing nothing of rights, bows to power alone.

Just now the Crescent seems to be waning more pronouncedly than for centuries. The Balkan Allies have won a brilliant victory, and as this is written, Janina has fallen to the prowess of the Greeks, and Adrianople seems on the very point of surrendering to the Bulgars. The Turk seems crowded almost off the map of Europe.

But the Turk is not Islam. His headship has not been for a hundred and fifty years a

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good thing for Islam. The decay of Turkey does not mean that the Mohammedan peril is a thing of the past. Nine hundred years elapsed between the defeat of the Moors at Tours and the victories of the armies of Europe over the Turks at Vienna. During those nine centuries the Moors had been expelled from Spain and driven across the Strait of Gibraltar, as the Turks may soon be expelled from the Balkan Peninsula and driven across the Bosphorus. But Islam still lived. There may now be living in some Bedouin tent, or some Afghan village, on the steppes of Russia or Siberia, in some city of Hindustan or in an African hut the man whose son will ride the wave of resurgent Mohammedanism. Or if not his son, his grandson, his great-grandson, or his descendant a hundred times removed. The world of the Crescent is wide, and its caverns and penetralia very, very deep. Out of them almost anything may come at any time. Out of them, instead of mad mullahs, veiled prophets, and beaters of tom-toms, Genius will assuredly come sometime. It may be the

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genius of civilization, or the genius of conquest and slaughter. That it is so likely to be the latter is what makes the Mohammedan peril a real one.

The triumph of science in the Christian world was the destruction of superstition. Let us hope that the Mohammedan world may be disenthralled and enlightened by the same process.

CHAPTER XIII

SEVEN PERILS OF HUMANITY—NUMBER TWO. THE SPANISH-PORTUGUESE PERIL

INSTEAD of the good ship *Earth*, let us suppose it were only our associations on the *Mauretania* or the *Olympic* of which we have to think. We sail on, first-cabin, second-cabin and saloon passengers getting along finely. None of them thinks of the massed steerage passengers, for their condition is of no consequence. They are cut off from the rest of us. We are in another world.

But suppose the decks of the great ship should suddenly become permeable, so that saloon, cabin—first and second—and steerage no longer kept their classes separate? We should all at once realize that it is a matter of the utmost moment what sort of people are in the steerage.

Great Britain and Ireland, France and Ger-

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many, Austria, Switzerland, and the Low Countries, Canada, the United States, Australia, and New Zealand, and British South Africa are the saloon, and first and second cabins of the good ship *Earth*. There are found on the average and among the masses of the people the maximum of intellect, luxury and comfort, and the minimum of poverty—though enough of that is found everywhere in all conscience. The steerage passengers surge like a sea all about these select-club nations. Just now we spoke of the Mohammedans—220,000,000 of them, who occupy the mountains and deserts from which they may one day descend and emerge, following the green flag of Islam in holy wars that shall shake the world again.

Let us now consider another danger to humanity—one scarcely recognized with any concreteness—the Spanish-Portuguese factor among the steerage passengers in the good ship *Earth*.

The Spanish and Portuguese at their best are among the finest of races. They are brave,

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poetic, hardy, industrious and efficient. But for some reason, they have never learned the lesson of justice and democracy. They do not know how to govern, to educate, to dwell together on terms of equity. They do not know how to establish liberty of the press or of speech. They have not the gift of kindly feeling and mercy to the lowly or to beasts. They are the most rapacious landlords, and the cruelest slave-drivers in the world.

And because they were bold soldiers and magnificent sailors and fighters four hundred years ago, they now have possession of the best portions of the good ship *Earth*. I shall say nothing of Spanish North Africa, or of the Spain-dominated Philippines, or Guam, or Portuguese empires in Africa, but shall consider only the wonderful and sinister manner in which the evils of four hundred years ago live yet in the Spanish-Portuguese control of America.

Sixty-five millions of people in the new world live under Spanish and Portuguese republics. But their numbers are small, com-

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pared with what they monopolize. From the Rio Grande south as far as the world extends it is all theirs. They hold sway over nearly 9,000,000 square miles of the Americas—more than a sixth of the land surface of the world. They possess half a dozen Californias, and at least three Mississippi valleys. In their mountain regions are Utahs and Colorados almost unnumbered. Two-thirds of the western hemisphere are theirs as against one-third owned by the English-speaking peoples, and these two-thirds comprise not less than three-fourths of the richness, the capacity to support population of the western world.

Brazil is Portuguese, and all the rest Spanish. But in the danger that lies in these peoples for the welfare of the good ship *Earth*, there is nothing to choose between these two branches of the Iberian tree.

In all these great nations the common people are debauched in superstition and crushed by tyranny. Cruel sports and cruel customs hold them down to the level of beasts as far as such things can do so. In Mexico, while

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families average five or six children, the infant death-rate is fifty per cent. So population grows slowly, if at all. The people neglect their children and live insanitary lives. They are slaves through peonage. With Diaz, or Madero, or Orozco, it is all the same with them.

In Central America the birth-rate is high and population increases with great rapidity—between wars. But the people are ignorant and enslaved. Through all South America—a continent so huge and so wonderful in capacity for supporting population that the imagination fails to measure it—the story is the same.

Everywhere Spanish and Portuguese medieval ideals rule. The lands are monopolized by landlords, some of whom own millions of acres. The common people are peonized and ground down. In rich, rich Paraguay, while the common people are rather free from poverty, the grossest ignorance and superstition prevail. In Chili the death-rate among in-

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fants is seventy-six per cent. In Bolivia the devils of cruelty and greed seem loosed. Not even in more sophisticated Argentina and Brazil do we find conditions much better. The whole of this great part of the good ship *Earth* is given over to land monopoly, peonage, ignorance and immorality. The percentage of illegitimate births in all these nations runs from twenty per cent. to fifty per cent.

It is not necessary to say that this indictment can not be made to lie against all the people of these nations. Here, as everywhere, there are many who stand for the highest ideals, and live lives of purity, altruism and idealism. And even in their faults, we of the less backward races have no right to look down on them; for they stand in the place we occupied not so very long ago; and among us are millions who now rank with their lowest. But the depressing thing about them is that the forces of evil and oppression seem to be in almost undisputed control, and the justifica-

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tion for any optimistic forecast for them is not apparent.

There is a world peril in this. The other passengers will need to move into these fertile wastes one day and will find them "owned" by such influences as I have described. What will happen then? No one can prophesy—certainly no one can prophesy peace.

The passing of a part of the *Earth* into such hands is a dreadful thing. It would have been far better had the lands now occupied by the Spanish and Portuguese republics been left in the hands of their Indian aborigines until now. The worst thing that could happen would be for these peoples to obtain scientific education and fail to gain democracy. For with sanitation and modern medical practise their birth-rate would fill up the land in a few centuries with a race of slaves as dense in population as are the Chinese, and with war-like blood in their veins which might make them the war-lords of the world.

Let us hope that these oppressed peoples

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may gain the reality, of which they all have the shadow—real democracy, and with it emancipation from landlords, from superstition, from ignorance. Until they do this the rest of the passengers must look askance at the Portuguese and Spanish Americans.

CHAPTER XIV

SEVEN PERILS OF HUMANITY—NUMBER THREE. THE RUSSIAN PERIL

"SCRATCH a Russian," says an old adage,
"and you find a Tartar."

This is true in many senses. The Russian is more Asiatic than European. Russian writers—among them Tolstoy—were until recently in the habit of speaking of Russia as non-European. And though the Slavic race seems to have been in Europe as long as has the German, it has always been in close contact with Asia. It was overrun by the Mongols and Tartars. Its princes once were khans. And when the Russian czardom was built up by the Ivans and Bazil, beginning about four hundred years ago, the princes of Muscovy saddled on the humble and docile Slav peasantry, a tyranny with the unbridled power and barbaric splendor of the Tartar court they had

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displaced, combined with the pomp and display of the Eastern Roman Empire, then recently overthrown by the Turks.

I put down Russia as the third of the Seven Perils of Humanity. As a passenger on the good ship *Earth*, whose posterity must inhabit the same whirling ball with the Slavs, I am not sure that it should not be ranked as the hugest peril of all.

And yet, the Russian people have the qualities that may make of them our greatest blessing instead of our greatest curse. Seven-eighths of them are farmers—no crowded slums and fevered city-plague here.

Eighty-five per cent. are of the peasant class. And the question of their part in the future of the good ship *Earth* lies in the uncertainty as to whether they will be allowed to develop their virtues, or be utterly debauched by their vices—for which they are not at all to blame. For the Russian aristocracy has long since adopted a systematic and diabolical policy of both blinding and debauching the masses.

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The Slav peasant is democratic. He has village communities in which he governs himself in peasant matters, a good deal as the New Englanders do in their town meetings. There was a republic in Novgorod which the Muscovite czars destroyed in the building up of their Tartar tyranny. The peasants have a love for village life, and will not separate into lonely farms as we do. They have long known how to associate into cooperative bodies so as to hire out, buy and sell and the like to better advantage. On these foundations there is every reason to hope that a great and beneficent democracy might be built up, were it not for the curse of the czardom.

The Russians are increasing faster than any other race and they have more open ground over which to spread.

That is what makes them a world peril.

Fifty years ago there were 75,000,000 of them. In 1897 they had increased to 129,000,000. In 1904 their numbers had swarmed to 143,000,000. In 1906 the central statistical committee counted up 149,000,000. In 1910

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the Russian Year Book sets down their numbers at 160,748,400!

This is an awful, a portentous showing. It includes, of course, all the classes and all the races of the Russian empire, but the Slav and the fine Finnish races make up nearly nine out of every ten of them. At this rate,—and there seems to be no reason to doubt their increase, unless their birth-rate is checked by enlightenment and prosperity, or their death-rate increased by war, pestilence and famine—there will be 260,000,000 Russians in 1950; 520,000,000 in the year 2000; 1,020,000,000 in 2050; and in the year 2100—with your children and mine, dear reader, on this great air-ship *Earth* to voyage along with them, there will be 2,020,000,000 Russians or twenty per cent. more than all the world now contains in population.

If they were always a peaceful people, willing to stay in one place and breed and starve, as the Hindus, the Chinese and Koreans do, it would be a different matter. They would then increase to the limit of subsistence, as the Chi-

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nese have done; and be swept off by infant mortality and famine, so that the swarms would remain always at about the same numbers. But the Russians will not be apt to do this. They have under their sway one-sixth of the land surface of the decks of our great air-ship. More unoccupied land is in their name than any other people owns. If the scientists are correct, who say that for a thousand years or more the carbonic acid gas, accumulating in the air through the burning of coal, will make the climates of this world warmer and warmer, the thawing of the frigid north in Russia and Siberia will make their lands the most desirable from the standpoint of producing a virile race, in all the world. To me it seems reasonable to suppose that this will come to pass. But no change in climate is required. The lands now open to reclamation and occupancy for the Slavs are almost illimitable.

What kind of people are they? They are naturally a good people. They have wonderful musical ability, their novelists are the greatest, perhaps, the world has produced, and

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they are painters, poets and reformers—when given a chance.

But their future will be a struggle between the good Slav nature and the Asiatic, the Tartar influences that govern them. The peasants are starving—and, of course, multiplying. People as poor as they never are guilty of "race suicide." They live "the simple life."

The emancipation of the serfs only plunged them into deeper bondage to the landlord through interest on their allotments of lands. This so-called emancipation was the most awful piece of robbery ever committed. Half the land "belongs" to the royal family. The peasants have not one-tenth as much as they need for their support. They are leaving their villages by millions to wander about as tramps in search of work and food. They are denied education. Good men and women who try to teach them are sent to Siberia or scourged by the police. They are systematically debauched by drink. The government, not so civilized as that of China, which is putting down the opium trade, is glad to have the

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peasants' brains benumbed with vodka, lest they think.

If these peasants, rising from this awful tyranny, can yet summon up the resolution to die by millions, if necessary, in order to throw off the czardom, to take from the privileged classes the lands and distribute them to the people, to make the state the universal landlord, as Tolstoy seems to suggest, paying the rent to the people themselves in the form of a land-value tax, and using it for schools and roads—if they can do this, they will grow in intellect, their birth-rate will fall off, they will spread more slowly over their wide domains, and they may lead the world in civilization, in virtue and in unselfishness. But Russia is like a huge boy who is wavering between genius and the deepest degradation—with the chances in favor of the latter.

If prayers can avail, prayers should be offered up for the redemption of Russia. For unless these swarming millions are redeemed the world may have an awful reckoning with

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them one of these days when tyranny shall marshal them in arms and drive them to battle under the slogan—"The World for Holy Russia!"

CHAPTER XV.

SEVEN PERILS OF HUMANITY—NUMBER FOUR. THE HINDU PERIL

BY the Hindu peril I mean the peril that confronts the fellow passengers on the good ship *Earth* from the people of that part of Asia lying south and southeast of the Himalaya Mountains. Most of it is British India. Farther India and its neighboring lands belong with them in a broad way. I call them the Hindu peril because the Hindus are the most numerous of them and the vast majority of them live in Hindustan.

These peoples are as numerous—to use an old simile—as the sands of the sea, and they are not good passengers for the good ship *Earth*. Sometime they may become such, but it is to be feared that long before they cease to be a menace to the welfare of all on board the problem of what our attitude shall be

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toward them will become a world nightmare.

Whenever a British writer begins to tell of India he protests that it is not a nation, but a continent. Well, it is large, but to American minds not amazingly so. Take a map of the United States, place your finger at Eastport, Maine, and follow the Atlantic Coast to Key West, Florida. Now follow the west coast of Florida to Pensacola, shoot northwest through Minneapolis and St. Paul to Prince Albert, Saskatchewan. Thence through the Canadian wilderness, travel eastward to Newfoundland and down the coast to Eastport again, and you will have made about such a journey as would bound British India.

It contains 1,766,000 square miles, while the United States has more than three millions. But while we have less than a hundred millions of people, British India has 300,000,000, (244,361,056 in 1901).

These 300,000,000 fellow passengers of ours are very poor, and very ignorant and unenlightened. Therefore they multiply rapidly. Wherever there is found on the good ship

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Earth a people which has a very high birth-rate, the masses will be found living on a low intellectual plane, on a low plane of prosperity, or both. The Hindus—meaning all the Indian peoples—are as far as the masses are concerned, not only poor beyond the conception of an American, but they are plunged into an intellectual slavery that is appalling. Therefore they multiply very rapidly.

In the absence of the accepted checks on population—war, pestilence and famine—and in the absence of the check which must come in to prevent those by checking multiplication—the extirpation of poverty and the attainment of high intellectual life—the people of India will at the rate with which their population has grown since first it was computed, amount in 1950 to 450,000,000; in A. D. 2000 it will be 675,000,000; in A. D. 2050 it will be 1,012,500,000; and in A. D. 2100 it will be 1,518,750,000.

There is, of course, no room in their present habitat for such swarms. There are many unused natural opportunities in their coun-

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tries. There are coal, iron, water-power and irrigable lands; but even at the present rate of increase all these opportunities will be overtaxed in a hundred years. The Hindus are robbed by taxation, and exploited by landlordism and monopoly, but with a perfect system of distribution of wealth, if such were to be hoped for, multiplying as they are doing, poverty would overtake them through sheer swarming—in the absence of the enlightenment which diminishes progeny.

For their increase does not show their birth-rate. War has been forbidden them by the Roman peace of the British rule. But still their ignorance and squalor, their neglect of sanitation and supineness under disease keeps down the multiplying hordes. And famine descends upon them whenever rain fails to come with the southwest wind which is called a monsoon—the rain-bringer for the Hindus. The government puts aside some millions of rupees every year as a famine-insurance fund to keep the people from starving in years of drought; but this can do no good. More peo-

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ple will live over this famine and therefore there will be more mouths to feed when the next famine comes. The cause of famines in India is not drought, but too many people and bad distribution of wealth. And if the distribution be remedied the people will at once multiply to take up the slack liberated by better institutions. The situation is perfectly hopeless in the absence of enlightenment and the adoption of sane beliefs. For population depends more on beliefs than on food and clothing and shelter.

So, unless the Hindu myriads can in some way lift themselves, or be lifted to a higher and more active intellectual life, there is no hope for them. And we, their fellow passengers on the good ship *Earth*, must not allow ourselves to think that it is a matter of no importance to us that these teeming millions lie there, sodden, servile and squalid.

It is of importance to all of us. It is of importance in a thousand ways. For one thing, plague festers among them all the time and now has found foothold in California and

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threatens the United States. For another, we can not as human beings, be happy with these brethren miserable.

And there are more concrete dangers. When the Mohammedan peril takes form, as it may one day, and Islam marches forth under the green banner of Mahomet, the caliph of all the faithful will find in India his best base of operations. Islam lacks mastery of industrial craft—the making of powder, guns, railways, ships, smelting ores, mining coal, all the facts and processes of science. She will find them in the 62,000,000 Mussulmans now in India. She will find ports and cities and a British-drilled army. Here she may establish her new Cordova. Her first blow will be to close the Suez Canal and seize India.

The unrest of the darker-colored races under the domination of the whites may play into the hands of such an irruption of Mussulman fanaticism into India. Since the Japanese won their victory over Russia, the attitude of the browns and yellows toward us has changed—all observers are agreed as to that. They

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have always hated the white man; but they have feared his seemingly irresistible power, and respected his apparently enormous superiority over them. But now yellow men have shown themselves able to meet one of the five greatest of the white nations on the field of battle, and defeat it. Yellow men have given evidence of being at least the equal of white men in science, organizing ability, financial genius and every other branch of the great game of statecraft. There is stirring among all the Asiatics and Africans a feeling which tends toward the solidarity of all of them against us. Should Islam ever reappear in the Indo-Gangetic Plain with her embattled hosts marching against the white man's armies, there is good reason to believe that under competent leadership she would find countless millions of the brown men leaning to her side, rather than to that of the successors of Clive.

Can India and her related nations ever emancipate themselves from their poverty and benightedness? That question is the one which constitutes the Hindu peril to humanity.

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I do not know. The curse of these three hundred millions is caste. Caste means that the hundreds of different classes hate one another and despise one another. There is no love or sympathy between class and class. How could we make any progress toward better institutions if the preachers loathed and despised the doctors; the doctors the lawyers; the lawyers the merchants; the carpenters the masons, and if to each the ones below were so unclean that they could not eat together, or marry together, or associate in any way on terms of equality? Yet such is the caste system of India. The scavenger's son must be a scavenger and marry a scavenger's daughter. There is no rising in the world, in our sense. It is an awful thing when to one occupation those below are unclean; but when such uncleanness is supposed to inhere in the flesh of every baby born to it the belief is too terrible for utterance.

Caste keeps the people from uniting for better things. It keeps them under the British dominion. It makes them the prey in all ages

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of some conqueror. On a mission in Bombay is a sign which reads, "Caste is our curse, but Christ is our salvation." That caste is their curse is true. And their salvation here on earth must be that democracy for which Jesus stood, and which we nominal Christians have yet to put fully into effect. Until, through democracy, these people gain enlightenment and general prosperity the Hindu peril will always lower over the passengers of this good ship *Earth*.

CHAPTER XVI

SEVEN PERILS OF HUMANITY—NUMBER FIVE. THE YELLOW PERIL

FROM time to time the terrors of the world have been aroused at the dreadful thought of the Mongolian race in arms against the rest of us passengers on the good ship *Earth*. As the barriers between nation and nation and between continent and continent become worn thin by science in eliminating time and distance and the strangeness of people to people, this fear must again and again rise to disturb us as we career through space, embarked with these yellow millions on this huge air-ship and doomed to sail with them willy-nilly, as long as *Earth* shall last.

Let us look the problem in the face. How many of them are there? Chinese, Koreans and Japanese, with their fringing outposts, 600,000,000—a third of all us passengers.

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Are they strong people or weak, intelligent or stupid, good passengers or bad? They are strong people. They are intelligent. As to whether or not they are good or bad passengers depends on what the future shall bring forth.

In the main and as to their masses they are backward in all that makes up a full and complex human life. They are very poor and if our beliefs are correct as to the validity of our sciences and arts and literatures as necessary evidences of enlightenment, and steps toward it, they are, except for a few thousand of them, unenlightened.

As they are poor and miserable, one expects to find them multiplying with great rapidity—and we do so find them. They breed like rabbits. The four hundred millions of Chinese have a birth-rate of fifty to sixty a thousand per annum.

The yellow terror, to us of the western world, has usually taken the form of fear of these numberless millions in arms against the white race, joined, perhaps by the browns and

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blacks of India and Africa. Just now the white race seems to have convinced itself that while the Japanese are invincible soldiers, the rest of the yellows are hopeless from a military viewpoint. And with the belief that the Chinese will not fight, goes the conviction that the Japanese have lost the confidence of China, and thus have forfeited their prospect of becoming the military teachers of the Mongolian race.

Both these optimistic ideas are fallacies. They are based on merely temporary and surface facts. Ten years hence may see the Japanese and Chinese cheek by jowl; and ten years are an instant only. There is no doubt that any power controlling China, and possessed of money to pay soldiers, can recruit them in any number of millions desired from the sturdy masses of the Flowery Republic; and the deeds already done by Chinese soldiers properly trained, well paid and adequately officered, show that such an army is quite as capable of subjugating the Eurasian continent as were any of the old-time migra-

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tions westward from China, of yellow men in arms.

There is more reason to fear the yellow race in arms now than ever before. Japan has mastered our arts and sciences. China is on the way to pass through the same sort of awakening. This yellow peril, therefore, has what the Mohammedan peril lacks—knowledge of the modern game of war, finance, science and exploitation.

But the military threat in the yellow race is not its most fearful portent, daunting as it is. Its greatest danger to the rest of the world lies in the demands on the earth's surface by the yellow men, by reason of their tremendous rate of multiplication. They are like a gas in a closed vessel—enlarge the vessel, and the gas fills it immediately. The Chinese already are in a constant state of famine from mere pressure of population on the power of the land to feed it. There are many unused opportunities for supporting population, but the moment the usable land is increased by a square mile the awful birth-rate will people

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it in a moment of the nation's life, and the case is as bad as before. The case of Japan throws light on this. By bringing into use all lands having a slope of less than fifteen degrees farms may be provided to accommodate the population for the empire until it reaches 86,742,388, instead of the present 51,742,398, without further crowding. The new lands will not be so good as the old, but maybe it will be possible to better the Nipponese farming practises, splendid as they are, so as to make the enlarged area support as many people to the square mile as the present cultivated area does.

But by the time this land can be reclaimed the people will be bred to fill it up. There are 3.4 people to every cultivated acre in Japan now. The average farm in Japan is 2.6 acres and supports a fraction less than nine people.

This means that as long as their birth-rate keeps up the yellow race must either find new lands or remain miserable. They will continue to murder their girl babies. They will still as now be able to think of little save

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food. They must still carry the excrement from latrines, mud from canal-bottoms, forest leaves from mountain tops and dung from roads to fertilize their lands. They must live lives stooped to the service of the rice and never have "the upward looking and the light." And they must continue looking out over the world on the lands of Australia, of New Zealand, of California, of Mexico and South America, with longing and with need—a need which must bring on wars, perhaps the greatest the world has seen, when they try to supply them. This pressure of population on land is the real and portentous yellow peril.

And there seems little hope of any let-up in the birth-rate for generations to come. The ordinary tendency of poor and benighted peoples to spawn is intensified by the beliefs of the yellows—and beliefs have more to do with birth-rates than does the Spencerian factor of plenty of food. The ancestor-worshiper must have a son to offer sacrifices to the gods or he can not be happy in the spirit world. So he thinks. They breed here that they may not

be lost hereafter. So long as this pernicious belief persists we can be sure that there will be in the world a yellow peril—a peril that may fill the seas with armadas, crimson the waves with blood and send hosts greater than those of Attila, to the very hearts of Europe and America. Enlightenment must come or danger will remain.

CHAPTER XVII

SEVEN PERILS OF HUMANITY—NUMBER SIX. THE BLACK PERIL

IN that darkest stoke-hole of the good ship *Earth*, called Africa, live nearly 200,000,000 of her 1,600,000,000 passengers—about one-eighth of the total list. Not all of these belong to the black race, but most of them do. And scattered over the world are many millions more of negro or negroid peoples. They tinge much of South America with black. They dominate the island of Hayti. They are struggling for the dominion of Cuba.

And they exist as a part of this great nation of ours in the proportion of one in every nine—or even a greater proportion. So many fellow men of such a marked type would constitute a problem on any ship—and they are a problem on the good ship *Earth*. To us of the United States they are so much of a

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problem that I am conscious as I write this that many thousands of negroes will read these very words, and that what I shall say here will in one way or another, greatly or slightly affect this problem.

The black race constitutes, not only a world problem, but a world peril. It is a race of strong people. It is a race of brave people. It is a race capable of great evil and great good. It is now rapidly passing under the rule of the Mohammedan faith and because that faith is one of armies and of conversion by the sword, and of a possible holy war, the fact that the negro is a brave soldier and prone to religious fanaticism makes the black race a part of the great Mohammedan world peril. In this the negro is a brother to the Hindu.

But the negro is a world peril because of the fact that he is a temptation to other races. He has of all races the greatest plasticity and the least power of racial resistance to force. This threatens to make him a weapon in the hand of Islam.

The black peril consists largely in the

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negro's capacity for enslavement. He breeds and flourishes in captivity. In the days of chattel slavery he was the most submissive of chattels—the only race the slaves of which enriched their masters and multiplied in numbers under conditions of servitude.

In these days of industrial slavery the negro still plays his ancient rôle in slavery which is damning to himself and his enslavers alike. He serves in the Kongo basin in rubber and ivory. He slaves in South Africa in the mines and on the cattle ranches. If he had been like the gorilla of his own forests—incapable of subjugation, willing to die rather than serve, ready to strike down his master with the first blade placed in his hands as a tool, a grim free fighter to the last—it would have been better for the world. But the negro is affectionate, yielding, happy even in slavery, a good servant, true to the interests of those having dominion over him—and he has been, and is, the temptation and the ruin of those who have taken him in their toils.

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The black peril has been thought peculiarly an American question, but it is not. It is a South African question, a German question, a Belgian question, a Canadian question, a world question.

In the United States it has been our greatest question since the constitution was adopted recognizing slavery without mentioning it. The black peril made labor disgraceful in half of the United States and cursed the poor whites and the rich whites. It was, of course, an economic question—slavery and exploitation always are. But out of the problem of the competition of the submissive black and the poor white for the labor offered by the rich white—a problem as acute now as in 1860—grows another problem and peril—the darkest phase of the black peril to humanity. This is the sex phase of the problem.

This we ordinarily refuse to discuss in a public way, or we talk in generalities against race admixture, or we criminally allow Judge Lynch to blazon terror to the negro. The

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question ought to be discussed in the open field of thought. It is the biggest part of the race problem.

In a splendid address to the world a negro congress once said in effect this: "The white race through slavery gave us the precious blessing of the Christian faith, but it robbed us of the virtue of our women!" Without admitting its general applicability, I accept this admission as racially true. The white man does not believe in the ability of the negro woman to preserve her sexual integrity against him. To his mind she is not strong enough in will power. Yet he fails to throw about her the protection which other women receive who are of like weakness. He places feeble-minded women under protection: mistreatment of them is shocking alike to the man and the community. Why should he not be equally ready to protect those to whom his philosophy denies the will and the power to protect themselves!

We, against racial intermarriages, legislate in a struggle to protect the purity of

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blood of the white race. I believe in this as a great and splendid struggle. Aside from any question of superiority of one race over the other, I think that the mating of white and black is accomplished only through a biological as well as a moral shock, which is evil. The races are too far apart ethnically to be crossed with sociological success. In a state of perfect freedom, and in the highest development of both races I do not believe there would be any crossing.

But how does the white man live up to his ideal regarding such unions? William Archer, the British writer, says in effect: "The presence in the community of large numbers of physically well-developed women of an inferior race places an unfair strain upon the virtue of the white man." But unions repugnant to racial purity should constitute no "unfair strain." If white men believe their own talk about the crime of miscegenation they should look upon it as they look upon incest—as a crime against the race, tempting

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to the pervert only. In old civilizations the marriage of brothers and sisters was common. Then the presence in the same family of the sisters may have been pronounced an "unfair strain" by some Egyptian Archer. But with the advent of a better civilization comes that finest thing in the world, the family circle. The temptation has departed, driven out by better ethics and purer love.

If the negro woman can not take care of herself the white man is bound to protect her as he protects other defectives. He should be condemned for rape if he sins herein. If the integrity of the white race is at stake in the matter the white man who sins is guilty of a crime like incest and should be punished accordingly. Let the white women of the lands of mixed population demand a higher ethics from their men. Let the white men do likewise for themselves. To claim superiority is not enough—the white race can prove superiority in only one way—by being superior.

The black peril may be turned aside by economic freedom for all, by justice to all, by

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the taking up by the white man of the real white man's burden—that of really living up to his claims. Until these things are done, and pending some great racial uplift in the negro race, the black peril will hang like a cloud over the broad decks of the good ship *Earth*.

CHAPTER XVIII

SEVEN PERILS OF HUMANITY—NUMBER SEVEN.

THE WHITE PERIL

WHEN rulership begins in human affairs peril begins. Public servants come only with successful democracy, and are blessings. But rulers are always a peril. The white race is the ruler of the good ship *Earth* and is a world peril. Of all the seven, the white peril is the greatest.

Japan is the only nation which is not ruled in ways more or less direct by the white race. Ushering in the era of discovery, the white race, finding the peoples in weakness and ignorance, made it an era of conquest, extermination, enslavement and exploitation.

This has never ceased. The grabbing of Tripoli is the latest of a horrid catalogue of which the conquest of Mexico may be taken as the first. Africa has been subdued and en-

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slaved. South America went to Spain and Portugal, where the whites, after establishing their prestige in landlordism and aristocracy cut loose from Spain and founded mixed-blood "republics" ruled and ruined by whites. Northern Asia and Mongolian Finland and Lapland have yielded to Russia; England, France and Holland have seized the South Seas, Farther India and Hindustan. Britain took and peopled North America, save for poor Mexico which crumbled into slavery under the Spanish conquistadors.

Only in lucky valorous Japan, in the Arabian and African deserts, and in mountain eyries like Nepal and Abyssinia are found free nations of brown, black or yellow men. The white man is at present supreme.

Our race accepted in Christianity the perfect system of ethics. It took the headship in intellect when it unrolled the marvelous book of modern science. It had a sublime opportunity to uplift the colored races in the era brought in by Columbus and Da Gama. At the wheel of the good ship *Earth* stood the

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white man steering it whither he would. He was captain. He had the firearms. He alone knew invention and science. He had the chart in the command "Thou shalt love thy neighbor as thyself," and he had the Golden Rule as compass. He knew the form of the ship—none other knew. To him was given the greatest opportunity ever known, the most fearful responsibility, the most awful opening for service. He had the chance to remake a world!

He failed. He refused the opportunity. He, as captain, betrayed his trust. Accepting the cloak of Christianity, the white race has denied Jesus a million times each hour. False followers of the Prince of Peace, the white race took to pagan lands undreamed-of engines of murder and unheard-of efficiency in it. Professing the faith which began in a crude communism which gave to each as he had need from those who possessed, and under which none wanted, the white races have not only not tried to extirpate poverty among themselves,

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but they have impoverished, enslaved and extirpated whole empires for money.

The white races accepted Christianity, and paganized it. They threw away the democracy of the Sermon on the Mount, and quarreling over the theology of Paul, followed Mars, Thor and Moloch as of old. They have never developed a Christian nation. Feared and hated all over the world, the white race is largely responsible for the imminence of the other world perils. Our very physiognomy is repulsive to people of other races—we are the Great White Beasts of humanity.

And now, as if to give us another chance for redemption, there is being revealed to the white race—and to it almost exclusively—the vision of democracy. Is not this the vision Christ stands for? This vision comes to an intellect in which honesty and candor have been deified through the redemptive grace of modern science. So the crisis of the white peril is on, in the question as to whether the white race will be true to Christianity as re-

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vealed in democracy, or will be false to it as it was to its first revelation.

It is not too late for the white peril to be turned into the hope of the world. It may be. We have lost the confidence of the other passengers on the good ship *Earth*, and we can win it again only by bringing our governments up to our highest ideals and living down our past. Not until we have so lived our Christianity and our democracy that our purposes shall be known to be pure, and not until we have extirpated our unchristian poverty and oppression, can we expect our brother races to believe in us as true soldiers of the common good.

CHAPTER XIX

THE MINGLING OF THE PEOPLES

IS Mars inhabited?

Professor Lowell, of Harvard, says yes. Probably most people of ordinary intelligence believe him.

Life, science says, came to the *Earth*, not by a mile-long string of animals moving up the gangplank "two by two," as we are tunelessly told was the case when Noah took on his passengers, but with the evolution of that marvelous slime, protoplasm, of which we have spoken. Mars has as good a chance to have had life, as the *Earth*. Like the *Earth*, Mars was once gaseous, then was compressed by gravity, growing hot in the process. On Mars, as on the *Earth*, God shook the cosmic prescription for millenniums.

Why should we not believe that there, on some creative day, as here, in the process of

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this mighty shaking, the atoms of carbon, hydrogen, oxygen and nitrogen were piled up into the inconceivably complex molecule of protoplasm?

Professor Lowell in the canals discovered by Schiaparelli, sees strips of irrigated lands. He sees the water flowing from the pole—where all the water on Mars is found—and irrigating these long strips, and broader spaces where the canals have their junctions.

Arrhenius, the scientist who has told us that owing to the carbonic acid gas which we are pouring into the air in the process of burning the coal taken from the bunkers of the good ship *Earth*, the climate of the globe is becoming gradually warmed, and will continue to grow warmer for a thousand years—Arrhenius denies Lowell's conclusions. He thinks the canals of Mars instead of being strips of crops, are huge cracks in the Martian surface, like the long straight fractures in plate-glass—or the curved cracks we sometimes see.

I have heard Arrhenius, and his arguments are very strong; but Lowell still holds to his

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original beliefs. He regards the canals as the results of the labors of intelligent beings. If so, these beings are like us in intelligence. They are engineers—for the lines run as straight as a stretched cord for thousands of miles. Some of them, too, run in curves—but perfect curves like those made by an engineer, and not like the accidental curves one sees in fractured glass. Sometimes these canals are double—as if the supply of water were more than could be economically distributed by laterals from one great ditch, wherefore another is supplied to use the surplus, when it exists, as in a wet season. I do not think that Arrhenius fully disposes of this very fascinating argument of Lowell's.

The lesson to us is the same, whichever is right. The canals as Lowell sees them illustrate the advantages to the inhabitants, if they grow intelligent enough to see that the planet on which they live is their common inheritance, and must be managed as a unit if it is to accommodate their multiplied hosts, especially when the globe waxes old and much

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of its capacity for sustaining life has been lost.

In our case, we are losing life-stuff by its washing out into the seas, and by chemical changes and absorption.

In the case of Mars, we know not of the other conditions, but we do know that her supply of water has so been absorbed into the globe that there are no longer oceans such as we have, but at most, only small seas at the poles—a condition that will sometime prevail on our planet.

Such enormous works as the Martian canals are only possible to a world in which such organizations as tribes, states, peoples and nations have been abolished, and all peoples have been merged in the Parliament of Man, the Federation of the World.

For the Martian canals run from the poles, clean across the equator, and down the other hemisphere—as if with us a canal were drawn as true as a straight-edge from Cape Horn to Winnipeg, or from St. Petersburg to the Cape of Good Hope.

We passengers on the good ship *Earth*

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could not do such things, if we knew how. We have not the intelligence, in the first place, to move such huge amounts of earth with such economy as to gain food enough by the operation to replace that used up in the work. So for us, it would be economically impossible. The great tribes we call nations would stand in the way. The passengers on one part of the decks would use armies and navies to keep their fellow passengers on other parts of the decks from carrying out projects having for their object the improvement of the ship as a place of residence—as a craft in which to voyage to the Unknown.

We are still so narrow!

If Lowell's theory of Mars is correct, the Martians are as superior to us in organization and capacity for government and collective action as they are in the power to move earth and rocks.

In Mars, the people know that the planet belongs to the people born into life upon it; as the good ship *Earth* belongs by every rule of righteousness, in common to us Earth-

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beings who are similarly born into life upon our wildly-flying air-ship.

The Martians know that Mars is theirs in common. We know that the *Earth* is ours in common. The Martians evidently act on a world-wide scale to conserve and use their planetary resources. We are not yet proven to possess the ability to conserve our natural resources even on the small scale of the nation.

And see the problems that confront us!

We must save the soil. We must keep the coal from being wasted. We must look after the iron, the silver, the gold, the copper, the manganese. We must build our waterways—a job less only than that which Mars seems to have accomplished. We must save the coal by using water-power wherever possible in its place. We must use the huge peat supplies for fuel. We must see that the supplies of phosphorus, nitrogen, potash and sulphur, on which the fertility of the soil depends, are not wasted nor monopolized. We must restore and conserve our forests. We must sweeten the acid soils of the *Earth* with lime. We must

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put under lock and key against waste the oil and the natural gas. We must see to it that the manures are restored to the soil from the towns and cities, and that the human waste now exhausting our lands by the loss of sewage, is saved that the human race may be saved.

And we must extirpate poverty, lift the masses of all lands to that plane of intellectual activity and opulence which will cause them to cease to multiply as the poorest races now do and always will multiply. We must stop the survival of the unfit, by making everybody fit.

Can we do these things while our right and wrong are notions bounded by lines of states, nations, or even races?

Can we do these things in the absence of action and feeling on the cosmic scale—considering this our *Earth* as a unit—the Martian way?

The *Lusitania* has to be controlled as a whole. Otherwise she would go on the rocks. We have fancied that the planet Mars is

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managed as a whole—one single planetary nation. The good ship *Earth* may sometime need to pass under planetary control—I do not see how in the last analysis her greatest material resources—soil, phosphorus, potash, oil, coal, iron and other treasures locked up in her bunkers, can be managed in the absence of planetary control. For the present we can do without it. The good ship *Earth* steers herself by automatic wireless control from the batteries of the infinite force.

It is well she does. For we are miserably divided—we passengers—into cliques and groups and gangs, cabin, forecastle, cook's galley and on deck. What a motley crew is the human race! Pirates, pilgrims, coolies, blacks, whites, yellows, browns, Kanakas, Lascars, Yankees, Japs, Portuguese, Malays, missionaries, convicts, slaves, Eurasians, Alan Brecks and Captain Dodds, Captain Kidds and Midshipman Easies. All these with their conflicting ideas—where they have any ideas at all—make world-wide team-work in conservation or even conversation, the wildest of dreams.

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And yet that is what is required for planetary control.

The races know one another better than they used to do—that is quite true. But does this new acquaintanceship really mean anything in the way of the wiping out of national or racial lines? Are we of the *Earth's* crew any closer together *spiritually* than we were when ignorant of the existence of the remoter parts of the ship on which we sail? Are we close enough so that we may mix nation with nation *ad libitum*? Has the principle of brotherhood so far approached attainability that men of one nation have the moral right to enter another nation's doors at will? These are the greatest practical questions in the world politics of the future. And they must be settled according to their right and wrong, rather than on the basis of weak vs. strong if our civilization is to stand the test of the future.

The right of expatriation is the complement of the right of immigration. These two principles test our understandings with our fellow nations. The English-speaking nations have

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led in maintaining the right of citizens to enter freely and dwell in the territories of other nations. The British navy by the roadside will tell you on all occasions that his is a "free country"—and he really means free—free to enter, free to leave. But Englishmen are asking whether or not this freedom to enter England is not carried a bit too far. Canada, with her great unoccupied spaces, is turning "undesirable" immigrants away—she will soon close her doors against Asiatics. Australia and New Zealand are still more insistent on their right to say who shall come in—in spite of their sparse populations.

In fact, it seems that our increased knowledge of one another as peoples, is coming with a world-wide reaction against the untrammelled intermingling of nation with nation. We find that we like some of our fellow passengers better than others; and curiously, these likes and dislikes are determined more by color than anything else. Is this pure unreasoning prejudice? I prefer to think that it is a psychic recognition of the fact that the sort

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of cross-breeds which would result are undesirable. This sort of repugnance is not confined to the human race—it is found sown all over the field of hybridization.

The test of any social act—or at least any governmental or sociological proposition, is its bearing on democracy. Will the intermingling of the races further or hinder the perfecting of democracy? This is to be decided in every case on the basis of the character of the races proposed to be mixed—their ethnic character, and their beliefs and thoughts. That we have a right to keep out of our nation undesirable factors seems obvious. Other nations have the same right. I think we should make very undesirable citizens of Hindustan or Japan if we emigrated thither in large numbers. It would not be so, perhaps, in the case of emigration to France or Ireland. The Japanese ought to keep us out in such a case. We have the right to keep out the Asiatics. They will interfere with our working out of the great experiment of democ-

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racy, if they come. We have one race question. We can not live with another.

Our quarters on the good ship *Earth* are ours because we find ourselves in them. Our title is the same as the title of a club to its clubhouse—and we have the same right to keep out those who are not clubable.

There are immigrants who must understand that we will not allow them to come in large numbers to dwell among us. This does not imply enmity toward them on our part. It does not imply superiority on our part or impute inferiority on theirs. It all depends on other matters.

We have a democracy to work out; and we are already divided into laboring classes, leisure classes, aristocrats, monopolists, nobles, commoners, Latins, Slavs, negroes, whites, financiers, tramps and the like. We are not at all sure that we can make a success of it as things stand now, without making them any worse.

Now we are so constituted that the presence

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among us of people who look pronouncedly unlike us at once starts a race question. Silly of us, maybe, but it can't be denied, nor argued out of us. Prejudices, instincts, intuitions are all very important. We are all the time finding how much better founded they are apt to be than are some of our reasoned convictions. Anyhow, peoples can not be made over, but must be accepted as they are, save for the ameliorating influences of time and progress.

Intimate relations between races are not always improper. Where outward appearances will allow the commingling to take place without shock, this mingling seems not a bad thing. Americans do not seem any the worse for the fact that they are the contents of a melting pot of nations. When Lafcadio Hearn and Sir Edwin Arnold fell in love with the life of old Japan, that love was the title of each to naturalization in Nippon. That great American chemist who is a Japanese by birth won the right to American citizenship when he became enamored of American life. Thousands of similar cases of real intellectual and

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spiritual naturalization may be found in stations both exalted and lowly.

But most of our immigration is thrust into our nation's body like a nail into wood by economic forces. Where the foreign body is capable of assimilation, as has been the case with most of our European immigration, this is not necessarily a fatal thing, though it is always a bad thing. But the negro, the Japanese, the Hindu and the Chinese fester in our flesh. Tens of millions are ready to come, not because they love us or our institutions, but as human merchandise. On the one side is the awful poverty of their lands from which they would flee to a land of plenty; and on the other is the greed of steamship companies itching for the dividends to be made by transporting them hither and the greed of employers itching for cheap labor. On both shores of our continent—the poorest and most unassimilable of Europe; the Semitic races from the Mediterranean Basin; and the Hindus, and Mongolians on the Pacific—they would land in swarms, were we to allow them.

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The oceans can no longer be regarded as impassable barriers against actual migrations of peoples. The ships exist, or can be built. The would-be immigrants—for the most part honest and industrious—are ready to mortgage their earnings for passage. The financial power exists to finance the migration. The danger is a real one, and one which will grow with the increase of knowledge and the progress of the arts and sciences.

Australia has the same problem, and so has Canada, South Africa and South America. The Spanish-American peoples are peculiarly exposed to this danger of race mixture minus human affinity.

The present war in Turkey shows the result of such intermingling. For five hundred years the Turks have festered in the flesh of Europe—a foreign body. Such festerings must cause wars. As between such conditions and wars, the wars are far more tolerable.

Sometime things will be splendidly otherwise. We shall have solved the critical problems of our civilization—democracy per-

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fect, poverty extirpated, enlightenment made universal. So will the other nations, unless there be some beyond redemption. There will be no economic pressure toward emigration. There will be less tendency toward race admixture; and what there is will be natural and good. Immigration now brings that bodily contact which Swinburne tells us of in the story of the French man-of-the-people and the lady of high degree, who, during the Terror were stripped naked and cast bound together into the Seine. In that better day it will be the drawing together of affinities, not the crushing together of opposites and strangers. Until the better day comes, there will be more of evil than of good in it.

CHAPTER XX

PATRIOTISM—VICE OR VIRTUE?

IT was a race of children who first populated the decks of the good ship *Earth*, and from whom we are descended; but not in all respects children like ours. They were very low in intelligence. They had much of the fierceness and cruelty of the beasts of the field and forest—and they never grew up. Our children pass through the various stages of low intelligence, deceitfulness, cruelty and the like very swiftly, and guided by our civilization. These remote ancestors of ours who once made up the passenger list of the old ship were every one of them cases of arrested development. They became men and women physically, but never passed mentally beyond the child stage of development.

We may easily understand this if we will consider such a tribe as the White Eskimos

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just discovered by Steffansson in Arctic Canada. They are probably descended from Norse emigrants who possessed all the progress our ancestors had a thousand years ago; but they have lost all the civilization that filled Iceland with poets, and produced a literature which is still studied in every cultured nation. They have no marriage rite, no books, no firearms, no aspirations. They only hunt and eat, beget descendants, and struggle with nature. Theirs is a case of arrested development—arrested by the very circumstances which stopped short of our racial stature all the early races of men.

Civilization is not a matter of inherent racial capacity. Rather it is a thing of racial accumulation, like the limestone reefs built by the coral insect. We seem greater because we stand on what our ancestors built. And in the course of the long millenniums there has been a slow race development, from the man of the Neanderthal skull to the man of to-day. But this is so slow that it can not be measured. We are in no perceptible way naturally

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superior to the German savages, the Norse vikings and their crews, the Romans, the Greeks, the Assyrians or the Babylonians. Our development has not been quite so quickly arrested—that is about all the difference.

Now these crafty, cruel, lying, thievish children, our ancestors, seem to have been inclined to live solitary lives like some other animals—the grizzly bear, the tiger, the lion. The wonderful strength of the family ties—which was the beginning of civilization—held them together into families, and from families the tribe sprung. The tribes preyed upon one another. Hate was the rule of life toward all but “our people,” and “our tribe.” Even the gods were tribal, with a divine jurisdiction stopping at the village limits.

As family grew to tribe, so strong tribes grew to nations. The germ of organization was germinating. And out of the strange, childish-savage hatred and cruelty of tribe to tribe, there was born a curious, glorious, contemptible, admirable vice-virtue called patriotism. It still persists, as the most univer-

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sally-claimed and the most generally-possessed of social qualities. All men are normally patriots, becoming traitors only under anomalous conditions. Scoundrels are quite as good patriots as decent people—and as a rule far more vociferous ones. The quality, therefore, is not possessed by good people alone, like unselfishness, nor by bad people alone, like cruelty. It inspires such literature as Scott's "Breathes there a man with soul so dead", Collins' "How sleep the brave", and Hale's *Man Without a Country*. Its most gross and obvious emblem is the flag, or the "Emperor's coat", and its cheapest badge is punctilious outward respect and worship of these emblems. It still carries with it much of the hate of olden times, and is the sentiment upon which the predatory powers play in securing public support for our monstrous militarism.

Now why should we, who inherit a portion of the deck of the good ship *Earth*, look any the less kindly on a fellow man because he lives across the line in Canada, or over the

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water in Japan or Germany? A man once sat dry-eyed and unmoved through a sermon which drew tears to all other eyes. "Why are you so cold and hard?" he was asked. "I don't live in this parish," said he, "I'm just passing through."

"My country!" ran the "patriot's" toast. "May she be ever right—but right or wrong, my country!" Such patriotism launches every battle fleet of aggression, and has put to the sword a thousand cities. Such patriotism fills the world to-day with the debt, destruction, waste and penury of the tremendous militarism which astonishes and appals every thinking mind.

But, as individual hate grew to family love, as family enmities were lost in tribal good will, and as tribal wars ceased in the wider brotherhood of the nation, so there is struggling into birth a new thing—Internationalism. When Great Britain attacked the Boers, there were great men in England who were frankly and openly pro-Boer, because the Boers were right. Many in the United States

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frankly and openly sympathized with the Filipinos in their resistance to our aggressions. Hundreds of thousands in Russia and Austria the day this is written, are protesting against war with the Balkan Allies, or the opposed powers of Europe, not because of cowardice or reluctance to take the chances of war, but for the sake of brotherhood.

Patriotism can not be dispensed with, any more than inter-family hate could have been in its time. Each is a sort of temporary defensive provision of nature, like the white plumage of birds in snow-time. But it is gradually blossoming into something higher. It can not be accounted among the eternal virtues. We shall gradually rise above the vulgar enmities implied in the hate of those who live elsewhere on the decks of the good ship *Earth*; and from these come most of what we call patriotism.

When men begin asking themselves as to the relations of their nations with other peoples, "Is our attitude right or wrong?" patriotism takes on a glorious new aspect. There

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was never so much of this international conscience as now. "My country, right or wrong," is giving way to "Is my country right, or wrong?"

Universal peace! Universal disarmament! Universal good will! These can come only with universal prosperity and universal understanding. When they come, patriotism in its present sense, will have died. Fraternity will have taken its place, and the old word patriotism, still holding place in the language, will have come to mean a localized phase of universal love and brotherhood.

CHAPTER XXI

THE EVILS OF GOOD GOVERNMENT

THE notion of a fusion of all nations, the end of independent nationality, is not a new one. It is more complete than formerly, for we know the shape of the great air-ship on which we sail, and its size. The ancients did not. But Alexander the Great set out to conquer the whole earth. He did not expect to subdue the monsters that lived in the Greek imagination to the east and the west. And to the north were the Hyperboreans and the ice, and to the south were seas that boiled with heat. These were not in the world of Alexander, but all he knew, he conquered.

So it was with other conquerors of the ancient world. What they knew they tried to seize. The world trust was in their minds, just as it is in the minds of the Socialists now—but in diametrically different form. In the one

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case it was the centralized rule of a conqueror and a tyrant; in the other it is service of all through majority rule centralized.

The dream of world power seems to have passed away for a while from the minds of kings and emperors. The government trust, if one is making, is at the stage of the splitting of the government business into huge blocks. Russia, China, Japan and England control most of Asia and are absorbing the rest. England and the United States govern most of North America, and are gradually absorbing the rest. England, France, Holland, Brazil and Argentina govern most of South America, and are kept from absorbing the rest only by the Monroe-Doctrine overlordship of the United States. England, Holland, Germany, France and the United States rule most of the great islands of the East and West Indies. England, France, Germany, Belgium, Portugal, Spain and Italy rule Africa with negligible exceptions. Europe is ruled by two groups—England, France and Russia in the Triple Entente, and Germany, Austria and Italy in

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the Triple Alliance. Thus is the good ship *Earth* in the hands of a certain great community of interest in government. It is for all the world like the system of interlocking directorates by which Wall Street parcels out the industrial rulership of the United States.

Now this system of spheres of influence works against the little country and the little peoples. It works in various ways in relation to self-government. In the English speaking dominions of the British empire, it works for local self-government and democracy. There are no better governments than those of Canada, Australia, New Zealand and South Africa. In the dominions of the other members of the government combine, it works against democracy. Over most of the colored and backward races, this dominion, which is mostly a white man's dominion, is frankly cruel and tyrannical at its worst, like the rule of Japan in Korea or Italy in Tripolitania, or at its best, is paternalistic like British rule in India or ours in the Philippines. And this latter phase of the problem leads us to the

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question of the perils of enforced good government.

There is an almost general feeling that we justify our conquest of a free people when we give that people what we call "good government." This is of all things most fallacious. In the first place, of course, our good government usually turns out the worst in the world even from our own viewpoint. England's dominions are well governed only in those cases where she has abandoned the attempt to rule and turned the government over to the people. Her rule in India, like ours in the Philippines, is highly praised, but is also bitterly condemned by good judges.

It is perfectly true, however, that an enlightened conqueror may, and frequently does, impose on a backward people a better government, judged solely by present-day results, than they could give themselves in their present stage of development. We may give the Filipinos railways, public baths, sewers and a health bureau which will fight the tropic plagues and the insanitary practises of trop-

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ical ignorance and depravity. England may do the same in her empire. So may each of the members of the great earthly government combine. This is what Kipling means when he urges the British—for he never speaks to any audience wider than the white society of the empire—to “take up the White Man’s Burden.” “Go bind your sons to exile,” he sings, “to serve your captives’ need!” These “captives” are the “new-caught, sullen peoples, half-devil and half-child.”

In spite of these fine rantings, however, the real danger to the world in the imperialisms of the government combine, lies quite as much in the success which Kipling claims for England in India, and demands everywhere, as in the failures which Belgium makes in the Kongo and Russia in the Caucasus. Bad and cruel government of the tyrant over the conquered may exterminate an undeveloped people, but a “good” government, accomplishing for a people through compulsion all the outward ameliorations which they should win for themselves may produce a result much

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worse for the good ship *Earth* than the extermination of any people.

Good government, to be worth anything, must be won through the evolution of popular government. The winning of it develops the power to perpetuate it. We learn to govern ourselves by governing ourselves—it can be done in no other way. Mexico may be far from democracy, but she is nearer it for her ninety years of effort than she would have been by submission to Spain—and the same is true of all the Spanish-American republics. They are falling down, but learning to walk. India will never learn to govern herself under present conditions, nor will the Philippines, nor Porto Rico, nor any “pacified” colony denied self-government and its perils.

But the worst danger in enforced good government lies not so much in the paralysis of development in the people, as in its effect on the increase and multiplication of the unfit. Good government tends to make its most rapid progress in the saving of life—especially infant life—through sanitation, vaccines, serums

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—preventive medicine—and surgery. This is true not only in colonies, of course, but in empires and republics called self-governing.

The revolution which is taking place in the healing art has already transformed it, and has only begun. Its finest manifestation is to be seen in the changed mental attitude of the medical profession toward the problems of health. Science has made the medical profession honest, just as it is making the whole world honest. The physician of the olden time did business on the strength of secret potions and marvelous lotions and unguents. His stock in trade was his closely-guarded formulas. The present-day medical man is in disgrace as soon as he refuses to tell the whole world his discovery. The first duty of an investigator is to publish abroad what he has learned. In fact, as soon as a medical researcher has found something significant, even though it be the result of one step only in his investigation, he is called upon by the ethics of his profession to make it public, to the end that others may be encouraged to join in the

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work or that they may receive light on some of their own peculiar problems.

The result is a sort of teamwork that is accomplishing wonders. We have found out that many of our ills are caused by minute animals or plants which find their way into our bodies. Disease thus becomes a mere matter of fact. There is nothing more mysterious about a thousand billions of little plants infesting the body as a germ disease than there is in the matter of a part of one plant thrust into it in the form of a sliver in the finger. The problem is more complex, that is all.

Drugs are becoming obsolete, except as they justify themselves in the rays of the new light. Nature is consulted. How does the body naturally deal with these intruders? That our bodies have adjusted themselves to the old warfare with germs is shown by the fact of immunity. We do not always contract diseases when exposed to them; and we have found out why. The body has means of fighting the germs. When we have had certain diseases we are immune to them. A very in-

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genious but not altogether satisfactory theory of immunity has been built up, and progress in sanitation is largely dependent on the fact—not the theory—of immunity. Vaccines and antitoxins are merely man's additions to the strength of nature's forces. They have already won in the contest with smallpox, diphtheria (which has been identified with membranous croup), typhoid fever, cerebro-spinal meningitis, tetanus, and to a very large degree with cholera, bubonic plague, hydrophobia and some others of the worst diseases. The prospects are that cancer and leprosy will soon yield. As this is written the world is filled with hope that the Friedman antitoxin for tuberculosis will do what Koch's seemed to have accomplished a quarter of a century ago but failed.

Even in the matter of medication, great progress has been made. Salvarsan and neo-salvarsan are almost specifics for syphilis—or seem to be. Quinine as a drug takes place with smallpox vaccine as old and accidental discoveries of things which modern science

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finds good—the former as a cure for malaria, and the latter as an attenuated virus for the prevention of smallpox. The study of the causes of diseases opens to governmental action tremendous possibilities in the way of stamping them out. We know that malaria and yellow fever, for instance, come to human beings through the bites of mosquitoes and in no other way. So that by the extermination of mosquitoes, or their avoidance, we can do away with the necessity of quinine as a cure for malaria, and make up for our lack of a vaccine or antitoxin for yellow fever—one or the other we may expect to be discovered at any time.

The work of Stiles on hook-worm is perhaps the most brilliant ever performed in this great field of brilliant work, and has resulted in a cheap and simple cure by means of a medicine for this plague, which probably accounts for more of the torpor, lassitude and lack of enterprise of the peoples of warm climates than we have yet suspected. Spotted fever has been traced to the tick and its host,

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the rodent; bubonic plague to the fleas carried by rats, squirrels and other small animals, and the hunt is on for the probable insect or animal carriers of pellagra, leprosy and many other diseases. There is no contagious or infectious disease which is not under surveillance by these skilled detectives of science, and the hopeful thing is that they all have clues. The hunt is an intelligent hunt, now, whereas all through the ages of the past it has been a mere matter of groping in the dark. Man is in the field against disease armed with weapons which will surely give him the victory.

Marching ahead of the physician, has gone the surgeon with aseptic surgery, and anesthetics. These things relate largely to the mechanics of the healing art; and their history is a tale of wonders with which the average mind is more familiar than with the more complex matters of immunity, anti-bodies, phagocytosis and opsonins which forbid most of us to pry into the new medicine. But surgery is scarcely less important in the cure of

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disease than its coordinate branch of the healing art.

Now, no people can voluntarily take advantage of these things in the absence of intelligence. The developed man will not have hook-worm; the undeveloped and untaught will never avoid it. Savages may be told about the causes of bubonic plague, malaria, yellow fever, sleeping sickness, smallpox, diphtheria and the like, and may have the cures or preventives placed in their hands, and the result will be negligible. Nothing but a "beneficent" tyranny can impose these things upon such people. I am firmly of the opinion that such a well-meant coercion, in so far as it could be made effective, would be a bad thing for the world.

It is an iron law of the world's welfare that only those ought to be saved who can accomplish their own salvation. Educate the people of all lands in sanitation, preventive medicine, all phases of the healing art; but except perhaps in the case of a salvable minority lagging

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behind the national march of intellect, the practise of these arts should be left to the people themselves. When they have so far progressed that they understand these things, believe in them and practise them voluntarily, they will have become fit for salvation from pestilence and insanitary lives. Not before.

Enforced good government—good government carried ahead of the people's development by governing classes of educated people tends to an undue multiplication of the passengers on the good ship *Earth*—and of those least fit to survive.

Seven out of every ten Chinese babies die in infancy. The same is more or less true in India, in Russia, and wherever poverty and ignorance are found on a fertile soil. The birth-rate among the poor in Mexico, Central America and South America is enormous. To enforce on these peoples governments which would allow the birth-rate to express itself in multiplication would not be a good thing, but a great evil.

When people win good government for

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themselves, they do so by a process of education, struggle, development and evolution which immensely complicates their lives. Our own case and that of the educated and enlightened classes everywhere are instances in point. This increase in the complexity of life, the freeing of women, the long period of education—in fact, civilization—makes a high birth-rate impossible. The imperialists demand that the benefits of civilization be conferred on these peoples in advance of their development. This is not truly kind to them, and it is a peril to the world. Let us help these peoples through education, missionary effort, every freely-offered stimulus to development—and stop there.

Their high birth-rate and their shocking death-rate come from the same causes. To remove one result by force and leave the other unaffected would be a crime against the civilization of the world.

CHAPTER XXII

THE REAL WHITE MAN'S BURDEN

HERE we are, the whites—the saloon passengers on the good ship *Earth*. We have the most roomy quarters. We have the wireless service, the reading-rooms, the music and the daily journals of our flight through space; while there be those of darker skins and darker fate who “sit in darkness” in the steerage.

We have Christianity, in an imperfect, and undeveloped form in our lives and still more perfectly in our thoughts. We have the wonderful new bible of science which has gone far to redeem our souls from quibbles and uncandor, and has brought us into the presence of essential honesty for the first time in the history of the race. We have truly applied Christianity in the perfect theory of democracy. These things have come to be current

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coin in the commerce of speech and thought in the upper circles of the passenger list of the good ship *Earth*—among the whites.

They are spreading to the yellows, browns and blacks, to be sure. Human brains are alike, whatever may be the tinge of the skin—and souls have no distinctions of color. But in the main, the great germinal conceptions which make for progress are the possessions of the white race.

Have we a duty toward those "that sit in darkness"? Is there a real "White Man's Burden" of which Kipling's barbarous image of jailorship is a shadowing-forth? Does it make any real difference to the white man as to what the fate of the other races turns out to be? Can he do anything for the other races, even if he tries?

He *must* do something for them. The blacks, yellows, reds and browns are contenders with us for the occupancy of the ship. They constitute the yellow peril, the Moham-medan peril, the black peril, the Hindu peril, and to a large extent, the Spanish-Port-

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tuguese peril. The races on the earth are like the cat, the dog and the fox which were sewed in a bag and hung in a tree—they can not ignore one another.

What do the other races lack which we possess? Broadly, they lack the essentials of good safe companionship on this great and mysterious voyage.

They lack that redeeming honesty of thought which science has given our best thought, and without which truth can not be attained.

They lack the understanding and appreciation of democracy, which is the hope of the world in that it makes for the development of every human being, rather than of an upper class standing on the masses' necks. Lacking that they must always be Lascars, Kanakas, beach-combers and pirates of the ship's crew.

They lack knowledge of the truths of Christianity. And lacking that, they lack the spiritual basis of the political redemption through democracy, and the candor and good faith of science. The golden rule is the summation of

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more redemptive politics and redemptive scientific conduct than any other utterance ever given to the world. The Sermon on the Mount is the magnetic pole of ethics to which all compasses of life must point, even when the voyages are frankly otherwheres. These things the white race possesses. It owes to the other races the duty of carrying them to all peoples.

In short, the real white man's burden is not that of conquest, but of evangelization. This must be done, not through soldiers, but through missionaries. The greatest profession of the future among us must be, not arms, but teaching.

And first, we must purge ourselves of our own gross and apparent sins, errors and shortcomings. Our message is that of the redemptive power of the principles of love, knowledge and democracy. Well, then the white nations must cease to kill, to oppress, to threaten. Otherwise they can not preach love. We must cease to suppress truth, even though it may seem destructive or damaging to great interests. Otherwise, we can not teach our knowl-

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edge with authority. We must do away with every obstacle to the exercise of the popular will in our own countries. Otherwise, we can not teach democracy. Love, knowledge and democracy are all stultified while poverty remains among us as our hoariest institution; and while that persists, we can not preach our message successfully in any of its forms.

The missionary efforts of the Christian world have not been more successful, because even savages divine the fact that we do not practise, or really believe our Christianity—and intelligent non-Christians know it. Why should they change one form of belief for another which makes no promise of a better life in this world? It is this world which needs missionary efforts—the future life will be better served than otherwise, I suspect, by properly serving this. We must show the nations of the world that our ideals may be lived up to in city, state, nation and Christendom. We must be able to hold out to the suffering peoples who sit in darkness—white and colored—a redemption from their sufferings in this world.

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We shall need to do greatly, and dare greatly, within our own borders if we are to do that—and such is our first task.

In the meantime, and after, a different sort of missionarying must go on. We must enlist recruits from the great intelligent peoples—the Japanese, Hindu, Chinese—they must help us as their fitness grows with ours. The white man's burden will become the developed man's burden. Our missionarying will reach every nook of the world, white, black, brown and yellow, with demonstration stations of right living—the living of the full, complex, complete, civilized life. It will be backed by millions of money, but not a single weapon. Where their manner of living can not save them, these missionaries will refuse safety. They will reject the protection of the powers, and punitive expeditions will no longer refute the truths of the teachers they are ostensibly sent out to aid. There will be an age of martyrs. The jungles of the tropics will receive many who will never come out. But if the white man's burden is to be carried, the

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knights and ladies of the future must ride by millions into dangers greater than those of Arthurian romance.

They will carry, not swords, lances and armor, but tools, laboratories and libraries. They will seek to inspire, not to control or govern. They will be patient, for they will know that a century is but a moment in this great game into which they are sitting. If they are killed, they will die unresistingly, and others will take their places. They will not ask for protection or retribution. And through this sort of assumption of the white man's burden will the world be redeemed, and the Kingdom of God be set up—not at Jerusalem, but over all the earth. Heaven will take care of itself, when people live these principles.

We passengers on the good ship *Earth* have been kept apart, have quarreled and fought, have ravaged and murdered for thousands of years because we could not agree about God!

This is the strangest of human tragedies. In the oldest of known books, perhaps, the ques-

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tion is asked "Canst thou by searching find out God?" The implied answer is that the thing can not be done. And yet, the breech-clouted savage is willing to bet his life in battle on the wager that he knows all about God. It is one of the first things he thinks he absolutely knows. Very soon after he has mastered it, however, he becomes satisfied that the stars and the moon are simple things which he quite fully comprehends. And the last thing to yield to civilized man's questioning is the soil under his feet—save one—the soul in his own body!

So it is that the lower man may be in development, the more impossible it is for him to comprehend the idea of a universal religion, or to assent to its desirability. To the savage, God is a being belonging in fee simple to his tribe. The next tribe has a god of its own, freely conceded to be a god, though a stranger. It takes a mighty march of mind to enable man to conceive of a universal religion, reached by diverse ways, through developments of many faiths.

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And yet, either by right or wrong methods, we are coming into view of such a development. A learned man was recently asked to write for a New York publishing house a series of books on the founders of the great world's religions—Jesus, Buddha, Confucius, Zoroaster, Moses, Mohammed. In discussing the matter he expressed the view that we have now for the first time in the history of man reached a point where such a series may be impartially written. "For the first time," said he, "such a series may be given the world in the light of a universal philosophy of religion."

To the Christian no less than to other religionists, the idea is difficult. Most people on the earth at this time have passed the stage of believing in a god belonging in fee simple to the tribe, the state or the empire. The conception has mastered the world that God is God—universal, omnipotent, omnipresent. This is a wonderful advance toward a universal religion—and yet there is something in it that stands in the way of religious accord. For

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each religion claims to be based on some peculiarly correct and authoritative revelation of God. The believer therefore is filled with the faith that his religion is the only true world religion, and that the universal religion can come by no means save the complete triumph of *his* faith. The Mohammedan believes this no less devoutly than the Christian—and this belief is stored with perils to the world.

But let us look back to the childhood of many of us when our parents and grandparents were perfectly sure that their Christian sect or church was the only one capable of saving souls from hell. The heathen themselves were no worse off than the communicants of the little church which held aloft its wooden spire or cross on the other side of the street. These creeds are substantially the same as then, but the old idea of God as the property in fee simple of one denomination has vanished with the concept of God as the property in fee simple of the tribe. Christians have come to think less of dogma, and more of love. They have

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drawn nearer to one another by rising to a common plane.

May not the same thing take place with the great world's faith? There came to this country in 1892 to the World's Congress of Religions—which may take its place in history as the first definite step toward world-wide religious peace—many of the more tolerant spirits of the non-Christian faiths. Among them was B. Nagarkar, a Hindu, who looked like a prophet and talked like Saint Paul. He was then, and for aught I know still is, the head of the Brahmo-Somaj, a reform religious body of India. He did not believe in caste, nor indelible uncleanness or damnation. He did not believe in child marriage. He was working for universal education and perfect democracy. He wanted for the Hindus all the benefits of science, invention and progress. He was a real progressive. His church uses a ritual in which are collected as inspired writings, the choicest gems of the holy books of India, our Old and New Testaments, the Koran, the Zoroastrian and Confucian scrip-

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tures. The Brahmo-Somaj is a religion of the Golden Rule and the Sermon on the Mount, of progress and enlightenment.

Nagarkar's creed and personality would have made him an acceptable pastor for almost any Unitarian church, and he was not much at odds with, and would no doubt have been admitted to, membership in some denominations regarded as orthodox. He was a deeply religious person—but the background of his faith was Hindu, not Christian. Out of this background he had emerged, and his church with him, to a position just below the great mass of Christian thought.

Are there not, then, uplands of the soul, on which we passengers on the good ship *Earth* find common earthly ground with the best of all faiths? May it not be that God is moving through such faiths as the Brahmo-Somaj in the Hindu world, and the Babists, or Bahaists in Islam to abolish caste, intolerance and poverty? Bahaism is the religion of a Mohammedan sect not more than seventy-five years old which seeks to establish "Humanity bound

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together by sympathy and unselfishness; a world in which there is neither intolerance nor war; a universal religion in which there shall be but two essentials—love for man and love for God; a universal language, and a universal educational system.” Here is an outgrowth of Mohammedanism which is Christian in its humanity but not in the acknowledgment of the Godhead in Christ. Its acceptance by the Mohammedan world would be a thing of such magnificent social promise to all of us as to be beyond description, and almost beyond imagination.

We may then look forward to the end of religious enmities. We may believe in a good time coming when Mohammedan, Parsee, Hindu, Shintoist, Confucian and Christian will feel less bitterness and hatred toward one another than they now do. There seems to be a pole toward which all spiritual compasses tend to point—the Pole of Divine Truth. We started far, far away from it, back in the long ago, when the huge air-ship *Earth* first saw the insect Man emerge from her

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decks, and the compasses were deflected from the pole by all sorts of disturbances, but we have been struggling up nearer and nearer this pole, millions and millions of us. And not from the Christian nations alone do these spiritual explorers come, but from every earthly land where there is a soul which in love seeks light. Every such case develops its spiritual Peary.

And as we win nearer to truth, we draw together. We see one another more clearly. We find less to quarrel about. We find more in which we can share. After the exploring souls press the rest of mankind. We dare not believe that any jungle holds a people incapable of redemption by this quest for the Holy Grail.

I am not speaking now of how this may affect the eternal welfare of those who win to the plane of tolerance and sympathy universal. But what a difference it will make in this world! And how much better able they will be to accept all truth!

Suppose that at the time when Alva the Catholic carried fire and sword through Hol-

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land because the Dutch did not believe in the Pope, or that later time when Maurice of Nassau, the Protestant, butchered forty thousand Dutch because they did not believe in infant baptism, the warring people of Europe had been as good citizens as Nagarkar the Hindu, or Abd-ul-Baha the Mohammedan—what a difference it would have made!

There has been progress. Even Christianity as practised by the nations is not what it used to be.

CHAPTER XXIII

THE UNITED STATES OF THE WORLD

ONCE more we have worked our way through the ocean of thought to the vision of a time when there shall be no more of isolation among the groups of people who make up the passenger list of the good ship *Earth*. We asked the question once, "Why not manage the earth as a unit?" and we decided that even though the Martians may be able to lay out their whole planet, and ditch it as a farmer ditches a field, our field, the deck room of the good ship *Earth*, is still in too many separate and hostile hands.

But we have now glimpsed the vision of a world religion. Can we not see the picture of a world government—a United States of the World, in which there shall be no more of exclusiveness in travel or trade between Germany or Japan and these states of ours, than

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there now is between Iowa and Missouri or New York and Illinois?

It is a divine vision! But it is not a new one. The poets are men who see more deeply, and speak more truly than the rest of us, and are therefore prophets. It is to Tennyson the Prophet that we must go for the best expression of this old vision.

“For I dipt into the future, far as human eye
could see,
Saw the Vision of the world, and all the wonder
that would be;

“Saw the heavens fill with commerce, argo-
sies of magic sails,
Pilots of the purple twilight, dropping down
with costly bales.”

And remember, Prophet Tennyson wrote this about the heavens filling with commerce, and the pilots dropping down with costly bales, before Langley built his first aeroplane, or Zeppelin his dirigible, or the Wright brothers rode their first glider at Dayton. And Tennyson, in his dip into the future, saw the horrors of aerial warfare.

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"Heard the heavens fill with shouting, and
there rain'd a ghastly dew
From the nations' airy navies grappling in
the central blue."

But he did not stop here. He looked on to
the development of peace from war,

"Till the war-drum throb'd no longer, and
the battle-flags were furl'd
In the Parliament of man, the Federation of
the world!"

Is this anything more than the baseless
fabric of a vision? Will there ever be any
such a thing as a parliament of man, a federa-
tion of the world? I believe that there must
be in the fulness of time.

To be sure, there was never a time when
there seemed less prospect of the Universal
Government Merger than now. Great Britain
still holds sway over her uncounted millions
of souls and scores of nations—by force rather
than by accord, save in the case of her English-
speaking colonies. Every great power grasps
its sheaf of subject peoples who hate their con-
querors—and is reaching for more. Italy

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has just snapped a mouthful from the flank of staggering Turkey in Tripolitania. Bulgaria, Servia, Montenegro and Greece are eating into the vitals of the same decadent power. Austria stands ready to leap upon Servia in anger at the stealing of a bone in the form of an Adriatic port. Russia is placing armies in the field to daunt Austria. Germany clenches her mailed fist in support of Franz-Joseph. France sharpens her knife for that portion of Germany's back called Alsace-Lorraine. Great Britain keeps up steam in her mighty pack of dreadnaughts in case Russia and France need aid. Japan and Russia are gradually gnawing into the huge passive bulk of China, which stirs, and sends out a new army for the defense of Outer Mongolia. Mexico and the Spanish- and Portuguese-American republics, sheltered under the Monroe Doctrine, look upon their mighty protector, remember the attacks on Mexico and the Philippines, and wonder whether the Yankee pigs are not more like wolves protecting sheep until a time of hunger. It is nearing Christmas, 1913, as

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this is written—and when was there ever apparently less of peace on earth, and good will to men?

The federation of the world will not come save through the need of it. Is there any need to be satisfied by federation?

Yes, there is as much need of world-federation now, as there was of colony-federation in America in 1775. There are many world problems that can not be solved save through it. There are world slums, which the advanced nations may be obliged to clean up and purify. There are world pest-holes which the world may wish to make sanitary, or to isolate. There are areas of darkness on which the world may find it necessary to turn the light. It is only because of our home problems and their pressing nature that we have found it possible to delay so long a world movement for the perfecting of society in the steerage and the fore-castle of the good ship *Earth*.

Moreover, there are questions of the division of the lands, and the natural resources of the *Earth*. The population is very unevenly

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distributed over the decks—and much of the best lands is unused. Suppose that Brazil fails to reclaim and populate the great Amazon Basin—is not the rest of the world, especially the over-populated portions, interested in having Brazil's delinquency remedied? Shall half the good deck room of the good ship *Earth* go half used because of one or two nations' lack of energy or initiative?

Suppose the world's supply of potash is finally found to be localized in Germany, and the phosphorus in the United States, as seems to be the case. Suppose that the iron mines and the coal mines also fall into the hands of one, two, or three nations. And suppose these nations, or as many as control them, either allow them to be exploited by private owners or refuse their product to the world on just terms, or take too much for themselves, or allow the priceless heritage of all the peoples of the earth to be wasted. Have not the wronged peoples a right to be heard in protest? Will there not be need of a federation of the world to deal with these problems?

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'Already there is growing up a thing never known until this era of ours—a world public-opinion. The world will never be federated in government, until it is federated in thought—save by tyranny.

Consider two only of the great federating tendencies. The Socialist party is the same party everywhere. It seeks to build up in every nation, another nation of working people, and to bring about a condition of industrial democracy in which all will be working people. Its growing power makes its worldwide success a thing to be regarded as far outside the bounds of impossibility. Its triumph would be in itself a federation of the world. The other great radical school of thought, not less powerful than Socialism in its influence on affairs, is the school of the Georgians or single-taxers. This school bases its propaganda on the principle that this huge Zeppelin the *Earth* is in justice common property, and that rent is the wedge that separates the privileged from the unprivileged. The triumph of this school of thought would at once estab-

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lish a federation of the world, and could not fail to lead to a listing of our world properties, a division of our natural resources on lines of recognized principles, and some central body with power to care for the common property of the race, and administer it for the common good.

Such a federation would draw the line between those activities which are national, continental or planetary functions and those which are better performed locally, and would usher in an era of local self-government in local affairs. It would be consistent with perfect liberty and seems essential to it.

CHAPTER XXIV.

A FEDERATION PROBLEM

WHEN the United States of the World is organized—as it must be some day—the federation will find a great many problems clamoring for solution. There will be demanded at once, not the Syndicate of Intellect that Kipling suggests as the world government, but a zodiac of constellations of human stars, each constellation a commission for the study of its own great series of questions.

And I think the first great commission will be appointed to determine what shall be done to stop the world-wide waste of coal.

This commission will indict the state of Pennsylvania as a criminal against the world for allowing the great coke companies of the Connellsville region to waste all the gas, all the tar, all the heat and all the fertilizer in making coke. It will indict the state of West

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Virginia as a criminal against the world for allowing the fuel gas to be wasted. It will indict all the gas producing states for the same crime against the people of the world, and all the coal mining states for allowing the waste of one-half to three-fourths the coal in mining. It will indict as criminals against the world's supply of coal all those states, communities, corporations and individuals which allow black smoke to escape from flues and chimneys poisoning the atmosphere and destroying property—and wasting a very considerable percentage of the coal burned. It will indict as criminals against the world's welfare everybody everywhere who is responsible for the crime of burning coal in steam-engines when from two-thirds to one-half of the fuel could be saved by throwing away the steam-engine, getting better educated operators and converting the fuel into producer gas for use in gas-engines. All these things it would do today, if there were a federation of the world, on the strength of the knowledge we now possess.

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Of all these crimes we are now guilty, and we know it. Our only excuse is that, after all, the shortage of coal is possibly only a scientist's chimera; that, anyhow, the crisis will not come until after we are dead—and that money must be made in this life if at all.

God said, "Let there be light"—and there was light. And the voyage of the good ship *Earth* was so ordered that millions of years ago when the air was full of carbon, great swamps existed in which grew huge plants which, through light and heat, took the carbon from the air and by reason of the repeated flooding and draining of these fields, coal was made. So coal is the light of millions of years ago stored in the bunkers of the good ship *Earth*. It is also light spiritual, and light intellectual. It is civilization. By means of its innumerable uses it is God's chief present agency for carrying over to us in world progress the light commanded "in the beginning."

The first great commission on the world's coal supply will find immense beds left in the bunkers of the good ship *Earth*. In Eu-

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rope, aside from the greatest mines, coal is produced in France, Austria, Hungary, Spain, Russia, Holland, Bosnia, Rumania, Servia, Italy and Sweden. But in none of them is there a supply known to exist which is more than will be needed in the nation possessing the mines, if we allow for progress and development in the future. Of those named, Russia has the greatest supply, but the mighty development of Russia under the democracy and justice which the world hopes to see the Russian people win, will call for the local use of every ton of coal under Russian soil.

Africa is poorly supplied with coal. The climatic conditions when the coal was laid down do not seem to have been favorable for its formation in the equatorial regions. There is a coal industry in the Transvaal, in Natal and in Cape Colony; but a developed Africa will draw on the rest of the world for most of its coal, so far as can now be seen.

Similar conditions exist in Australia. There is a coal industry in almost every province of Australia, and in both Tasmania and New

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Zealand; but there is no reason to believe that there is more than the Australasia of the future will need.

India has a good deal, but probably needs it all. Mexico has about a six months' supply for the United States if it were all taken out next year—300,000,000 tons. She will need it all and more. Brazil has a good deal of rather poor coal. There is no reason to expect a surplus there. Chili mines less than a million tons a year, and has no great supply. In Venezuela and Colombia coal exists in small quantities in scattered localities. Peru has extensive deposits of both anthracite and bituminous—which are worth looking into by the coal commission of the federation of the world. Aside from these, South America seems barren of coal, save for small deposits of poor fuel.

The world's supply, therefore, must come from North America, China, Great Britain, Belgium, Germany and localities mentioned above which can not long furnish surpluses.

One authority says that at the rate of min-

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ing in 1900 the fields of Central France, Bohemia, Saxony and North England would be worked out in one hundred to two hundred years; the other British fields, and those of Waldenburg-Schaftzlar and North France might last two hundred and fifty years; the mines of Belgium, Aachen, and Westphalia were rated good for six hundred to eight hundred years, and those of Upper Silesia for a thousand years. But this does not take into account the startling acceleration of consumption going on all over the world. Neither does it reckon on the fact that as one district fails, the demand will rest on the others, until the last to go will be mined with a fierceness never seen before. The last of a field plows off fast.

As for the American supply, the Geological Survey has reversed itself and passed from a position of extreme pessimism since Campbell indicated the exhaustion of our fields in one hundred and fifty years, to that of extreme optimism in a recent report in which it is pointed out that at the end of 1910 there

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remained in the ground a supply equal to four thousand times the amount mined that year. This too fails to reckon on the ever-increasing demand which will make the consumption of 1910 look small within ten years; nor on the concentration of the world's demand on the good mines when the smaller fields are worked out.

The last great field to be considered is that of China. The province of Shansi is one vast coal field, practically untouched, both anthracite and bituminous, and covering 30,000 square miles. Some years ago the Baron von Richthofen said that China had enough coal to last the entire world several thousand years. Probably the baron had not considered when he made the statement the manner in which we are speeding up in coal consumption, but there seems to be no doubt that China has the greatest coal fields in the world. A free, educated, justly-organized China may find in these great mines a means whereby the Chinese can redeem themselves from poverty, and the "sordid round of getting and begetting" of

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which Ross speaks as now constituting the Chinese life.

More mines will be discovered—many more—and more uses for coal. The coal commission of the good ship *Earth* will, however, claim every ton of it as the property of the people of the world, and not that of any nation, or state, or corporation, or private owner, or class of private owners. And it will ordain that useless and wasteful consumption be stopped everywhere.

The coal in the bunkers of the good ship *Earth* is a product made millions of years ago by the radiant energy of the sun—light and heat—acting through the life-force in plants. Once used, it is gone forever. For the carboniferous era can not return to the earth—or if it could, it would exterminate the human race.

But there is a way to utilize the radiant energy of the sun coming to us day by day. And yet we mostly waste it. It is as if a man with an income half sufficient for his living,

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should throw it away while drawing on a bank-account to which no deposits could ever be added.

Remember that in dealing with this matter of coal we are considering force. Force must be used up in every human product. Force is another name for work. Coal is another name for work. It does what would else have to be done by man or beast. And as coal is more powerful than all the men and beasts in the world, it does work that could not otherwise be done at all. Our bridges, railways, skyscrapers, Panama Canals, factories and mills are greater than the works of all the other ages—notwithstanding the Pyramids and Karnak, the Colosseum and the Parthenon—just because we have coal to do the work for us. Those old works were done by slaves, and we do ours with free labor—just because we have the coal. Well it will be for us when we have a federation of the world to find out how much coal we have, and to see to it that it is saved, and not wasted.

All the while we have been burning coal so

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fiercely, the sun has been ready to do more than half the coal work by the force of yesterday's sunlight, instead of that of the carboniferous age. The sun is a giant, which lifts millions of tons of water every day to a height of thousands of feet in the air through evaporation from the oceans. This water floats out over the land, and falls in rain and snow. Much of it falls on mountains and highlands, from which it runs in rapid streams. For ages man has used the power so stored in water, to turn mills and do some work; but within recent years we have found out ways by which we may turn it into electricity, and—wonder of wonders!—from electricity back again to heat and to light as of the sun.

This descending water is called "white coal" because it will do almost everything that coal can do. Indeed, a great deal of the coal we burn is turned into electricity, by a process so wasteful that more than nine-tenths of the power of coal is lost in the process! Thus

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far, the invention of the dynamo and electric motor, instead of being a means of saving coal, has actually increased its consumption and accelerated its waste.

The coal beds are our bank-account on which new deposits are never made; and the water-power is the daily income capable of sufficing for more than half our needs—which we waste, waste, and all the time waste!

There is nearly 3,000,000 horse-power constantly wasting down the slopes of the mountains of our eastern states. We are giving away the sites to power companies who will claim the privilege of making future generations pay for this work of God's sun; but we as a people are not developing the power. These Appalachian streams, if dammed and furnished with all wheels it would pay to install, for those portions of the year when the current is strong, would give us an output of 6,000,000 horse-power, worth a hundred millions of dollars a year. By storage reservoirs to hold back the flood waters we might not

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only prevent most of our terrible floods, but we should increase this output of horse-power many fold.

We do build dams, but we are guilty of the incredible crime of refusing to utilize the power our own publicly-owned dams develop. The dams the United States government has already built for the benefit of navigation now waste, even in low water, power which might turn wheels to the enormous amount of 1,600,000 horse-power; and they might profitably during half the year send it out at the rate of 4,000,000 horse-power per year. There are grave doubts as to whether or not under the Constitution of the United States we have the legal right to generate and distribute profit from our own rivers even though we may build the dams! But fortunately the Constitution is not a cosmic fact.

The New York, Pennsylvania and New England water-power is not included in the above estimate, and is enormous. All the Great Lakes states have tremendous power possibi-

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ties. The Pacific and Rocky Mountain states have it in still greater volume. The rivers of Canada offer power in quantities simply incalculable and inconceivable. Mexico, South America and Asia—no one has even estimated the water-power available to the passengers on the good ship *Earth* in these regions. Wherever the rivers of Africa—the Nile, the Kongo, the Niger, the Zambesi—flow over the mountain rim of the dark continent, there are cataracts wherewith to light it—light it in myriad ways.

We are using power—counting coal-power also—in the United States at the rate of less than 20,000,000 horse-power. There is available water-power running to waste to turn every wheel of this. There is water-power running to waste to turn every wheel now turned by steam in all the world. The power sites are not always near where the wheels are located. In many cases they are too far from the centers of population to be transmitted profitably by our present-day methods. But

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we shall learn more about transmission. There are some uses for which coal is essential, and always will be.

But the age of white coal is a future certainty. The captains who rule the good ship *Earth* in the days of the United States of the World, will gradually cause the load of our increasing work to be laid on water, and taken from coal. We shall use daily the sun-energy of this year, and save our lessening deposit of the sunlight of the carboniferous age. Copper highways will gridiron the world for the accommodation of the current from the wilds where the cataracts are found. Population will shift slowly from the coal regions to the power sites. The great manufacturing cities of the future will be built in the Alps, about the reservoirs of the Appalachians, along the slopes of the Andes, the Himalayas and the Sierras—wherever power and raw materials can be bought together.

It will be a cleaner sweeter age than the age of coal. It will express in all its life the science which will be the universally dis-

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tributed wealth of all minds. After a while the burning of coal will be confined to those uses which are not to be served by electricity. The depletion of the coal beds will be so reduced that their exhaustion can be regarded as indefinitely postponed. Such additional fuel supplies as gas, wood, petroleum, alcohol and peat will be eked out by science so as to make the fuel problem less and less important. Means may be found to get heat directly from fuel by chemical reactions, and thus save the waste in burning. The rays of the sun, the waves and tides of the sea, the winds and even the interior heat of the earth may finally be available for the work of the world, in the days when the captains of the good ship *Earth* shall ordain the age of white coal, under the claim for the people of the *Earth* of the right to and sway over every watt of power which the sloping decks of their ship may be capable of generating from the rains of heaven.

CHAPTER XXV

THE PREVENTION OF FLOODS

NOTHING could be more beyond control, to the mind of the primitive man, than a flood. The imagination has selected the flood as the most ineluctable of all catastrophes. It visualizes a drowned world as the penalty of sin; and Noah, representative of the saved, finds safety, not in controlling the waters but in yielding to them.

Floods seem to defy resistance. Fires may be fought, but floods come straight from the hand of the Almighty. When the windows of heaven are once opened, civilized man dwindles again to the feeble stature of a savage. Paris, the center of civilization on board the good ship *Earth*, tamely submits when the Seine leaves his banks. In the Lower Mississippi Valley American civilization stands by helpless when the Father of Waters as-

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sumes a father's prerogative of chastisement. The patient Chinese, bowing to the power of the flood, call the Hwang-Ho the "Ungovernable". For four thousand years they have been fighting the floods, always failing to govern the "Ungovernable", but always trying again, and again, and again, after every failure, with a persistence which is both sublime and touching. The "Great Yu", 4,200 years ago, filled a position a good deal like that of the head of the corps of engineers of the United States army—only Yu had the Hwang-Ho to fight. He was a great engineer when our ancestors were savages. Greece and Rome have risen and fallen, the Germanic races have spread in savagery over Europe and developed civilization, the Moslems have in successive waves almost swamped Caucasian civilization, America has been discovered and peopled, the Moslem wave has receded, the summit of prosperity and activity in all the world's history has been reached in a continent which was unknown to the civilized world 3,500 years after the "Great Yu" was appointed superintendent

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of works in China in charge of river improvement—and still the Hwang-Ho is called “China’s Sorrow”, “the Scourge of the Sons of Han” and like names, by the wonderful people who live so simply and laboriously along its banks.

As recently as 1898 the “Ungovernable” devastated thousands of villages and cities. In 1877 it destroyed a million people—and these are only some of the most dreadful paroxysms of “China’s Sorrow”.

Floods grow more and more dreadful as the deck room on the good ship *Earth* becomes more crowded. The fiercer struggle for sustenance forces people to live on the rich lands which are below high-water level. The American people are forced upon the Mississippi bottoms by necessities similar to those which have for thousands of years driven the Chinese not only to the banks of her rivers and canals, regardless of safety, but actually out upon her waters by millions.

Those who are directly imperiled by floods are the poor—the rich live on the high lands

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—and they can always move. Our greatest floods are small in destructive power compared to those of other lands, simply because we have not so many poor, and have not utilized our river bottoms so completely. Unless something is done to control floods, we shall gradually reach the state of China—a state of things in which millions of people will be drowned annually in the inundations of the Ohio, the Missouri-Mississippi, the Tennessee, the Sacramento, the Alabama Rivers, and the streams flowing across the Atlantic coastal plain from the Appalachian Mountains.

Nothing is more pitiful than a city or a farm devastated by a flood. A fire is at least clean and definite in its conclusion. A flood is most endurable at its height. When it recedes, its misery grows. The sodden houses, the clothing and bedding spread out to dry, the household goods desecrated, the house rendered unwholesome for occupancy, the furniture falling apart, the disease, the fields stripped of crops and perhaps of soil, or strewn with sand and gravel from the hills—a

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flood brings the very abomination of desolation.

And yet, most floods might be controlled by modern engineering, directed with all the energy of a great people. There is reason to believe that what China needs more than anything else, now, is a modern successor to the Great Yu. This man would command the resources of all China to reclaim the whole Chinese lowland from the danger of floods—and in doing so, he would make room for millions of people to live in plenty.

Each river system is a problem in itself, as far as floods are concerned. The rivers of China rage in freshet and dwindle in drought for the same reasons that cause all the streams that fall into the gulf east of Texas, all that fall into the Mississippi from the east, and all that empty into the Atlantic to do the same things—because of the destruction of the forests on their headwaters. The deforested hills of China are desolate, and breed floods. The deforested hills of New England, and the middle and south Atlantic states are going the

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same way. Water runs off a plush-covered seat or a forested hill or mountain slowly. It runs from a varnished seat or a bare hill or mountain rapidly. Where man has stripped the forest-plush from the high portions of the decks of the good ship *Earth*, the rainfall rushes roaring down into the scuppers, called valleys, bringing destruction to those who live down there.

When we become really civilized, we shall reclothe the mountains which our need and our greed have stripped of their forest cover. This will in itself stop the worst of the floods—and furnish us with the timber we shall so sorely need. In this way can some of the “Un-governables” be governed.

Irrigation will call for more and more of the water which now wastes down in floods. The Roosevelt Dam in Arizona is an instance. Never again will a drop of flood water pass out of that valley. Every drop will be used for the crops, and will seep slowly back into the stream. The Yellowstone in Montana will all be used for irrigation—and so of many

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other rivers. If the Dakotas and Montana were to be plowed twenty inches deep, scarcely a tenth of the water which now goes from them to swell the Missouri would flow from the soil. It would sink in—and the soil needs that deep plowing.

The problem of the Mississippi floods is largely a question of getting rid of the waters from the Ohio and its branches. Plans have been sketched out for holding back these waters in a great system of reservoirs, stretching from the headwaters of the Alleghany to those of the Tennessee. Other great reservoirs are possible along the Upper Mississippi—where, indeed, many have already been constructed. "Water conservation," says Lyman E. Cooley, "demands storage, and four per cent. to six per cent. of the area in reservoirs will equalize the flow of streams. By fish culture such reservoirs will have greater value than the land taken. They add to the landscape, and make places of recreation for the people."

Let the world rise to the occasion, and the

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floods will be at an end. With the ending of the floods will come in the age of water-power or white coal. The waters, as they flow down from the mountains, are more valuable than the lands they devastate—if their devastation were necessary. But they need bring no such devastation—and they can be made to do more work than our coal can do, and instead of destroying the lands below, they may be made to enrich them beyond measure. This is work for each nation on the good ship *Earth*—and if the nations fail, it is work for the federation of the world.

CHAPTER XXVI

THE SOIL IN JEOPARDY.

THE decks of ships are scrubbed by a process called holystoning. The holystone—called so, perhaps, because the use of it was once a regular Sunday function on sailing ships—is a block of soft sandstone, with ropes attached, which is pulled and hauled back and forth by the sailors, over the wet deck.

The decks of the good ship *Earth* are holystoned all the time—Sundays and week-days. The Alps and the Rocky Mountains are rough spots which have not been scrubbed very long, as time is measured by earth conditions. They are rough and rugged—but the holystoning is going on all the time, and one day they will be low and some day they will be level with the plain. The Appalachian Mountains are rounded and lower and covered with trees—

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they are old, old mountains, and have been holystoned by nature for many more centuries. The plains are pretty well smoothed down by the sailors—wind and sun and frost and water.

This process of wearing down is a thing which we passengers on the good ship *Earth* may do much to accelerate or to retard. That is we may make the process of erosion either more or less rapid.

Let us imagine a court room in America in the year 2000. A farmer is brought into court by an officer.

"What is the charge against this man, Mr. Officer?" asks the court.

"He is charged with a violation of the erosion laws, your Honor," replies the officer.

"What is the evidence against him?"

"There was rain yesterday, your Honor," testifies the officer, "and on inspecting the fields below his farm, I found muddy water flowing. I traced it to its source, and I find that he is so cultivating his farm that the soil is actually flowing down into the brook in

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turbid streams. It is clearly a violation of the statutes."

The farmer protests that the rain was torrential, or the cover crop failed, or he urges some other excuse for letting muddy water run from his fields; but never for a moment does he suggest to the court that the muddy water is *his* affair, not the state's, that it is *his* soil, not the state's, or that he has a right to farm *his own land* as he will. For remember, this is the year 2000, and it has become a truism on the good ship *Earth* that the old ship herself belongs to the passengers in common, and that the soil is the people's. The farmer, like the town dweller, simply has the right to the home he has built upon it—the right to a home forever; but he must treat the soil which belongs to all in such a way as to keep intact the most precious heritage of the race—that black crust of dark earth, only a few inches thick, which it has taken so many years to accumulate, and which once destroyed can scarcely be replaced.

Does this sound like a dream—a Utopian

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dream? Not so fast! I read only a few weeks ago in a report of a Japanese experiment station that the Japanese government had forbidden the use of lime in a certain way on certain lands. "This soil belongs to the people of Japan," says the law, in effect. "We have tried experiments and found that the use of lime on that soil is bad for it. You must stop it!" You see, the Japanese are doing it now!

In Japan a man who owns a tree may not cut it down at will. He must get permission of the public officials, and when he cuts the tree after receiving permission, he must plant young trees to the number called for by the rules. A similar policy prevails in Germany.

What has this to do with erosion? It has this to do. Muddy water flowing from lands indicates erosion. No muddy water flows from a prairie in a state of nature, or from a forest. The process is going on all the time, but it is by the slipping of a few grains per year per square foot to a point an inch or so lower—it is so slow that the soil is not carried

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away any faster than the subsoil is turned to soil. Erosion of this sort does no harm—it does great good. It has made the *Earth* habitable. The richest lands have been made by it. But when man plows the prairie or clears the forest, erosion starts up fiercely and destructively. Thousands of square miles of the Appalachian Mountains and of those of California have been destroyed for human use by it. We dare not build the reservoirs for flood prevention and water-power now if we would or they will silt up with mud. We may not make our rivers the great waterways they should be until erosion is stopped, because they are filling up with the mud from the hills, the valleys are being ruined by gravel and sterile detritus spread over the once fertile bottoms. We are criminally ruining the decks of the good ship *Earth* for the use of our own descendants.

Destructive erosion of mountains and hills can be stopped by national systems of forests. Destructive erosion of farms can be stopped by various well-understood methods. Hills

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too steep for farming should not be plowed; but they often make good pastures—and they will not wash away when in sod. Good hilly land may be farmed in such a way as to prevent washing. The southern plantations before the war were laid out in terraced fields to be plowed and planted according to the contour of the hills—no matter how steep the hill, the furrows and rows ran level. This hinders erosion when properly done. Every farmer in a hilly region should be shown how and obliged by law to adopt the plan. Hillsides may be terraced, so that they become a succession of levels which will not wash—for the steep slopes will be grassed over. Hillsides should never be cultivated with long exposed slopes of plowed earth—the slopes should be broken by strips or balks of grass which will catch the wash and hold the melted soil in place.

But, after all, these plans are not equal to the occasion. The real need is that the silt of our rivers be saved, and the mineral plant food carried out upon the lands and caught

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in the soil by percolation. The Chinese and Japanese show us how this is done. Their rice paddies, even on hillsides, are graded to a water level, and furnished with a rim of earth all around to keep the water from running off. It is caught thus, so that each field is a lake, the water of which soaks down through the earth, and leaves its mineral plant food in the soil. Sometime we must come to this. When that time comes, the Mississippi floods will be controlled not only by reservoirs in the hills, but by canals spread all over the Atlantic-Gulf coastal plain. Doctor King points out a plan which must be followed if North America ever supports the population of China. A canal like the Grand Canal of China will run from the mouth of the Ohio to the mouth of the Rio Grande, skirting the hills all along, and catching the waters from every stream from the northwest. Another will run from the spot on the left bank of the Mississippi where the bluffs end—near the mouth of the St. Francis—and will follow the base of the hills across the states of Mississippi,

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Alabama, Georgia, the Carolinas and Virginia, to the Chesapeake Bay in Maryland. This canal will catch the waters of all the streams coming down from the mountains east of the Mississippi and south of Pennsylvania. It will be a great waterway; but its main use will be to distribute the waters over the lowland plains, now so inferior in farming value in the main, and make of them another China in fertility. A thousand subsidiary canals will bring all this land under irrigation—which it needs as much as do the lands of China—indeed, the laboriously irrigated lands of the Hwang-Ho Valley have more rainfall than any of these in the south of our own country. The real limit of population, as has been pointed out by McGee, is the water limit—and that limit can be raised in only one way—the conservation of water.

The final center of population of the United States will be in Dixie. When the prairies of Iowa and Illinois shall have been exhausted, the balmy southern lowlands, irrigated by a great system of canals, drained by tiles, graded

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to level fields, its swamps filled by making them settling beds for river silt and drained by pumping, will be the region where our most teeming population will live in plenty. And this without much reference to the sort of land it now is. In a hundred years the farmers of Denmark have made themselves the richest people in average wealth in Europe—by farming a waste of sand-dunes like those of the North Carolina littoral.

Freedom, justice and the exercise of public dominion over the use of the land—these are the essentials to progress, and almost the only ones.

“Boil the water!”

This is the cry all over the land, save in favored localities. Our streams and lakes are polluted. All up and down the Ohio and its branches typhoid rages in recurring epidemics. Chicago used to regard her water supply, coming as it does from a great, cold, clear inland sea, as unimpeachable. It became polluted, and Chicago dug through to the Illinois River and sent her pollution down to

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the Gulf past St. Louis and a dozen other cities. She then thought herself amply protected.

But she is mistaken. The bodies of the Great Lakes themselves are becoming contaminated. Careful studies show that typhoid is unduly prevalent in almost all the cities and towns of the Great Lakes. Those who know say that their waters are "dangerously contaminated."

On the soil of China, where from two to three thousand people live on each square mile, and have done so for thousands of years, one does not expect to find the water of the soil fit for drinking—and does not find it so. But why is it that our lakes and streams are growing so vile at such a rate of speed?

It is owing to a modern invention—the sewer. The excreta of any animal are poisonous to it—and human excreta are poisonous to man. We are pouring this poison into the lakes and streams at a fearful rate.

The pollution of the waters is a serious thing—but it is not the most serious phase of

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the matter of sewage. Sewage is fertility of the soil temporarily rendered unfit for animal sustenance. Let the plants take it up, and they will make it over into fruits, flowers, grains, woods—into every shape of beauty and charm the landscape displays or hides.

The sewers, therefore, are open veins from which is flowing the life-blood of the race. Never until this age of sewerage did such a danger confront the passengers on the good ship *Earth*. It is a new thing—and a new danger. Sewage contains potash, nitrogen and phosphorus—the precious mineral elements which the plants must have or starve, and in the absence of which no soil can produce crops. These elements come from the fields in the meats, the bread, the vegetables and the fruits which are consumed by the people of our cities. The soil from which they come is poorer for their removal; and when they are flushed into the streams, the waters are poorer in all that goes to make up the riches of the waters, and the fertility is lost—forever.

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This loss amounts in that most precious element of fertility, phosphorus, to not less than two pounds per acre of all the cropped soils of the United States per year. It would take 1,200,000 tons of phosphate rock per year to replace this fertility in the soil. Ground phosphate rock, not so good for crops as this sewage would be, is worth on the average over the United States not less than seven dollars a ton. So in phosphorus alone, it costs us \$8,400,000 a year to pollute the streams and lakes. It costs us the typhoid, too, and the loss of life, and the expense of sewage disposal. This estimate does not include anything for the nitrogen or the potash. It does not include many things in the destruction of the cleanness and purity of our forests and streams, which are beyond all price. And it includes nothing for the cost of boiling the water so as to make the intestinal bacteria harmless for drinking.

The city of Berlin has sewage farms upon which the outflow of the city sewers is allowed to spread. The area of these farms is

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43,009 acres! In 1910, in addition to disposing of the sewage—which is a costly thing for most American cities—this sewage paid the city of Berlin a profit of \$2.66 for every million gallons handled. And the produce of these acres must have decreased the cost of living in Berlin and vicinity. At any rate, the drain of fertility and the pollution of the waters were stopped. This is called “broad irrigation,” and is practised extensively both on the continent and in Great Britain. It is used at Pasadena, California, and was in use at Los Angeles, where the people seem to have been frightened out of the plan by finding that the Chinese truck-gardeners were using the sewage in growing such things as radishes and lettuce, for which it is unfit. With these few exceptions, there has been no attempt in this country to return sewage to the soil from which it is drawn, and to which in economic morals it belongs.

But there are ways of saving the fertilizer in sewage other than by irrigation. At Madison, Wisconsin, it has been found that the

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sludge of the sewage, dried, is worth about \$8.00 a ton for fertilizer. At Columbus the sales of fertilizer and grease from the sewage more than pay for the operation. At Glasgow, the sludge is submitted to pressure, and the liquid, carrying much fertility, no doubt, is wasted in the river; but the dried residue is sold to farmers for \$4.29 a ton. "Yorkshire grease" is extracted from the sewage at Bedford, England, and sold for \$40.00 a ton. The solid residue brings \$2.50 a ton for fertilizer. Similar methods are followed in other British cities, while at Chorley the sludge is used in making gas. The dried sludge at Manchester is readily bought for their land by farmers at \$5.00 a ton. At Kingston-on-Thames the sludge is mixed with other fertilizers by concerns engaged in the business of preparing them, and sent back to the soil. At Norwich the grease is extracted and the residue made into fertilizer. In Leeds ammonia is made from it. In some of these forms sewage is utilized at Oldham, Dublin and many other cities.

The drain on the soil of the United States

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by the exportation of grains, meats and other products of our soil is enormous; but it does not necessarily represent an actual loss to the fertility of the globe. Shipped away from our farms, it may reappear in those of our brethren on the other side of the water. This is not a world question, but a national one. The loss through the sewers, however, is a world question. It represents a weakening of the vital powers of Mother Earth through her abuse by her children.

Van Hise, of Wisconsin, says: "It has been held that in this country it is impracticable to use sewage for fertilizer. The answer is, it is being done in other countries. The phosphorus of sewage can be saved either by direct use of the sewage, or the separation of the phosphorus by some method to be developed. It is certain that one of these must be done, if in the future we are to conserve the fertility of the soil."

When the good ship *Earth* shall pass under the control of the captains who shall wield the power of her peoples' will in the days of

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the federation of the world, no such childish question will be asked as to whether it will pay to keep our streams and lakes pure from human excrement, or to keep up the virtue of our soils.

That will be taken for granted. The rewards will go to those sons of earth who will show how the evil can be cured.

Perhaps it will be done through the abolition of cities. In villages the task would be easy.

CHAPTER XXVII

THE HAULAGE OF FERTILITY.

THE ability to destroy the earth is in the hands of man. It is a new power, and comes to him through wonderful increases in his might through knowledge. Knowledge is power—how trite, and yet how true! We are destroying the earth day by day, as far as concerns human habitation. We are so using the hills and fields that their fertility washes away, never to return. We are so cultivating the soil that its virtue departs year by year in the phosphorus, nitrogen, potash, sulphur and lime we carry from it. The ability to destroy comes along with the pressure of need and greed, both of which urge us to take away and not replace, to exhaust and not replenish. But we are coming to another age.

Already the phosphates are being mined and ground and used on our farms. The potash of

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Germany comes in such tonnage that the control of its shipment by the German government has become an international question. Nitrates are sold as freely as ever, notwithstanding the discovery that the pod-bearing crops will take nitrogen from the air. And the demand for lime for the soil is far greater than ever. As for sulphur, we once used great amounts of it as ground gypsum, or "land plaster", a use which has been abandoned only to be revived, if the students of the subject are to be believed.

Except in the case of some few alluvial soils, which are naturally supplied with new plant food by means of the minerals dissolved in the waters which overflow them, all soils which are cultivated will sooner or later need phosphorus in the form of phosphate rock. This will become one of the great questions in the future—and in the not distant future; for the original supply of phosphorus on good soils like those of Ohio, Indiana, Illinois and Wisconsin is a third gone after fifty years of cultivation. The phosphate rocks are mostly in

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Florida, the Carolinas, Arkansas, and the Rocky Mountain states of Oregon, Idaho and Montana.

Imagine the situation when all the depleted acres of the east, the south and the Mississippi Valley, not to mention the rest of the world, begin to call for phosphates. The carrying of this immense tonnage of rock from the deposits to the farms will be one of the hugest transportation problems which ever confronted a people. While the supply in Florida, South Carolina and Arkansas lasts this carrying problem will be hard enough; but when the phosphates must be brought from the northwest to the east, south and middle states and for shipment abroad, if such shipment be allowed as a permanent policy, it will be stupendous. The present railway lines to those regions could not carry from the mountains to the farms half the supply of phosphate which it would be desirable to use now, even if they abandoned all other tonnage. But, of course, new railways will be built—many of them. Whether or not it will ever be possible for

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phosphate rock to be hauled by rail from those regions on such terms as will enable us to keep up the fertility of our lands, is really the thing which is doubtful.

What is true of phosphorus is equally certain with reference to potash. The present supply comes from the potash beds—and is shipped a long, long way. We shall need a hundred tons of potash to one used now, when we begin to go seriously about the drainage and reclamation of our 70,000,000 acres of swamps—for swamps are usually so poor in potash that they need it from the very day of reclamation. Our own supplies of potash are found in the kelp growing in the Pacific Ocean off the Californian coast, and some small beds of potash salts in the Great Basin. The carrying of this supply from any of these sources is sure to become before very long a huge problem for the nation—and as other nations are no more favorably situated, on the whole, these will be enormous world problems for all us mariners on the good ship *Earth*.

Nitrogen can be bought in the market, as

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yet, though this supply is limited; it may be saved in immense quantities from burning coal and in other commercial ways; but in the main we must get our nitrogen from the air, in which it is found in unlimited quantities. There are many plants which take nitrogen from the air, and use it in their own growth. When they die, they leave some of it in the soil. But the plants on which we must mainly rely are the pod-bearing plants or legumes, such as beans, peas, alfalfa, clover and the like. They house in their roots the bacteria which are able to fix the free nitrogen of the air in such quantities that the farmer who plows these plants down has more of this most precious of plant foods than he had before. No such operation is possible with any of the other elements of plant food.

Air transports itself. The haulage of nitrogen is not, therefore, a problem, as in the case of the phosphorus in the phosphate rocks, or the potash in the sea and its kelp, or the potash beds of Germany. But it presents a problem in transportation for all that. There is

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lime enough for the crops in almost any soil but the root-bacteria of the legumes will not live in an acid soil. When a soil is "sour" it must be sweetened with lime before the bacteria will live in it, and until they do so live, the crops that enrich the soil with nitrogen can not be grown. Millions of acres of our so-called "poor" soils need lime for the bacteria rather than fertility for the crops. Limestone is found in unlimited quantities in almost every country, but the transportation of the ground limestone or the burned lime to the lands is a great task for the nations, and a pressing duty resting upon the transportation facilities of the world, perhaps as great as the haulage of potash and phosphorus.

Sulphur has long been supposed to be plentiful enough in all soils so that, with the fifteen to twenty pounds per acre which fall in the rains and snows each year, it would never become so scarce as to limit the growth of crops. But investigators have recently found that this is not true. Plants use much more sulphur than was supposed. Many soils now need sul-

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phur. The supply is unlimited, and is found in the gypsum beds. The grinding and hauling of gypsum to the lands is sure to become a greater and greater task as the years go by.

In addition to these problems in the haulage of fertility, there is that of returning the manure to the land. All the hay and grain used in cities reaches the final condition of manure. So with all these things fed to animals on farms. This manure is the best fertilizer in the world, containing as it does, phosphorus, potash, nitrogen and sulphur, together with the plant fiber which makes humus in the land. The waste of manure in this country is a great national crime—nay, it is a world crime, since it decreases permanently the capacity of the world as a whole to maintain population. The burning of manure piles is a crime. The practise of allowing them to rot away unused is a crime. The wasting of these immense stores of fertility in cities, by burning, dumping into the sea and otherwise, should no longer be permitted. What is true with regard to manure off the farm is true of it on the farm. No

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landowner should be allowed to waste the fertility of the land through waste of manure because the land happens to be "his own farm." The world has an interest in the maintenance of the land's virtue—for "the earth He hath given to the children of men"—not to *some* of the children of men.

Do you see the problem! It is very simple. We are all the time hauling fertility away from the fields in things to eat, drink and wear. The ships and cars and wagons of the world are loaded with this away-going fertility. And the ships, cars and wagons must be loaded with all that is necessary to return it—if the world is to last.

CHAPTER XXVIII

THE RAILWAYS ACROSS THE DECKS

THE measure of a civilization is in its highways. A people like the ancient Greeks, whose lands were all islands and peninsulas, or the Phenicians and Carthaginians, who dwelt on coasts, to whom the ocean was a universal highway, might climb to great heights of civilization in certain specialties; but when a people is spread over great expanses of land, it must build highways, like the canals of China, or roads like those of the Romans or like ours or it must remain semi-civilized and nomadic like the hordes of Genghis Khan and Tamerlane, or the tribes of Arabia.

Lord Bacon says: "There be three things which make a nation great and prosperous: a fertile soil, busy workshops, and easy conveyance for men and commodities from one place

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to another." This is the dictum of the greatest mind, perhaps, which the world has ever produced, in favor of what the Socialists call "economic determinism".

We have considered in these letters the matter of soil fertility. Let us now look at the question of "easy conveyance of men and commodities from one place to another." We speak glibly of the "annihilation of distance", and "the triumph of mind over matter"; but it is perfectly clear that we passengers and crew of the good ship *Earth* are dreadfully cramped in our activities by the limitations which matter imposes on mind in the matter of easy conveyance of men and commodities from one place to another. If by taking thought the goods of Europe and North America could be magically moved to the places where they are needed to feed, shelter and clothe the poor of the world; if by a magic carpet the products of farms, forests, stock ranges and mines could be transferred to the cities and mills; if by seven-league boots the rotting fruits and woods and precious growths of the tropics could be re-

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moved to the marts of trade; if by mind force people could really annihilate distance and appear where their needs and desires might dictate; if by occult power the mineral fertility of the earth could be redeposited in our depleted soils—then there would be no need in the world, in the absence of robbery or theft.

The spread of the people on this huge planetary *Zeppelin* over those portions of her surface which are far from seas and navigable rivers, under conditions of progress and civilization, is a new thing. It has been made possible by the invention of the steam-engine and the railway of iron and steel. The camel, the bullock cart, and the horse-drawn vehicle could serve a sparse population and a barbaric development, and when supplemented by slavery could produce a state of affairs which presented many of the outward aspects of civilization—but it was civilization which was monopolized by the few and for which the masses slaved and died in darkened agonies.

The railway changed all that. It carried

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commerce across continents, and democratized the civilization of the nineteenth century. For it harnessed to huge cars bigger than the ships of the Greeks and rolling on wheels set on smooth metal tracks, enormous artificial draft-animals swifter than the horse of Phœbus, and more powerful than the Minotaur. The railway has done more for democracy than has any other one material agency.

It has done enormous labors—and it must do more. Most of the civilized nations have seen the error of allowing these highways to be owned by some men, rather than by all men through governments; and nearly all of them have now reduced these roads to public ownership. Great Britain, Turkey and the United States are the only ones that still adhere to the outworn notion that the ownership of the highways should be left in private hands.

The needs of the people in the future can not be met by privately owned railways. This must be apparent from almost any view-point; but if for no other reason, the railways must be publicly owned because they must be called

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upon for public service to be rendered regardless of profit. Transportation is a huge collective job which must be performed with reference to the development of the nation, rather than any sort of profit. Germany, through her government railways, is able to develop any part of the empire at will, through railway service. We have tried to develop our industries by means of protective tariffs—and no man knows with reference to these industries how much of their prosperity is due to the tariff, and how much to advantages of soil, people and situation. But a government railway can equalize conditions all over a continent, so far as the limitations of a railway transport will admit. Government railways could carry to a region devoid of stone and timber, for instance, whatever might be needed, and thereby create prosperity where poverty might otherwise reign. It could carry these things regardless of profit. All it need determine would be the question, "Is there here a region on which population

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can be supported, if its natural disadvantages are compensated for by transportation!"

A government system of railways must be called into service to carry back to the depleted lands of the United States their lost fertility. The privately owned railways can not be justly asked to do this except at a profit; but the publicly owned system would assume the work as a clear duty. Highways are necessary to the development of the hinterlands of the world. They are as indispensable as are elevators for the utilization of the top stories of high buildings. Symmetrical and uniform development of the good lands of the world is not a private question, but a public one—a question of world-wide significance. It can not be left to a solution along lines of profit to the owners of railways. Railways in private hands fall short of the needs of the occasion in modern civilization, just as slavery fell in ancient times. No lands separated from the sea by continental distances, and unprovided with waterways, can ever be completely

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developed by privately owned railways—they must always remain in that stage of arrested development in which such states as Iowa and the Dakotas now find themselves, and in which they are mere feeding territory for the fully developed communities of the seaboard.

After all, why should profit be considered in the matter of transportation? Absolutely free use of railways for both freight and passengers would create such property values in the districts reached that they could easily carry the burden in taxation. To the average mind the suggestion of free highways at once calls up the vision of traffic blocked by both freight and passengers; but no freight would be sent for amusement, or for any other reason than to satisfy human wants, and no one would travel save for some object. So we are brought to the conclusion that humanity will never be free to satisfy its wants until the railways are free, as the elevators are free in great buildings. Free highways would bring to perfection Bacon's ideal of a nation with "easy con-

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veyance of men and commodities from one place to another."

Does the thing look visionary? Well, take the state of Iowa. Give her free railway transportation to the lakes and the ocean. Tax the city and rural land values of Iowa to pay the cost of the building and operation of the railways. Can it be doubted that the values created by the free ways would pay for their operation? Would it not pay a corporation owning Iowa to build railways for its free accommodation? Then why would it not pay the people of Iowa? Free transportation may never come, but that it is an economic possibility under a proper system of taxation, I have no doubt. I believe, too, that the most economical way to pay transportation charges would be at the court-house rather than the railway office wicket.

CHAPTER XXIX

ROBINSON CRUSOE'S LESSON

ROBINSON CRUSOE, every one will remember, found a good log and made himself a fine boat in which he deemed escape from the island perfectly feasible. It was a good boat. It was so light that once in the water, he could have taken it anywhere water ran by oar or sail.

But he forgot the principle which must control transportation all over the good ship *Earth* if her passengers are to get out of her management the products called for by the needs of multiplying humanity. He forgot that a weight is a thousand times more easily moved when afloat, than when ashore. He could not put his boat in the water. And though it was a perfectly good boat, he was forced to see it rot away by lapse of years, because he could neither take it to the sea nor bring the sea to it.

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When a weight is floated in water it is more easily moved than under any other circumstances of transportation. By this simple truth the big facts of history are explained. It explains why Greece and Rome became great, why the greatest nations of antiquity were grouped about the shores of the Mediterranean, why Japan is so wonderful, why the Northmen overspread the western world, why the "meteor flag of England" means so much, why Russia is so undeveloped interiorly, why Holland and Belgium are the marvels of the world, and why Denmark has been able to make the tillers of waste sand-dunes the richest people in Europe in per capita wealth. It accounts for the desert steppes of Siberia and Canada and interior Australia. It has determined the status of South America and Africa as the Dark Continents. It holds Iowa back in development as compared with Illinois, and tells Iowa to step before South Dakota. It strings great cities along waterways like pearls. All these things are explained by the simple physical fact that if a thing is to

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be moved with the greatest possible ease it must be floated in water. The hinterlands of the world may build their dugouts, but unless they are able to place them in the water, their work will be futile.

The railway has been invented for the purpose of solving Crusoe's problem. But it is still an open question whether the far backlands can ever be fully developed by land carriage—even the railway is so much more expensive a thing for moving things than the waterway. On a good waterway it is profitable to carry a ton a thousand miles for a dollar; but the railways of the United States are obliged to collect about seven dollars and fifty cents on the average, for the same service. Coal and ore are carried on the Great Lakes more than two thousand miles for a dollar per ton. Coal is shipped by water from Cleveland to Duluth for less money than it would cost to have it shoveled down cellar if it lay in the alley by the cellar window.

The world went daft over the railway and has allowed that greatest of all inventions in

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land carriage, first, to fall into private ownership, and second, to destroy the commerce of the inland waterways. Both were vital errors; and both are being remedied in most civilized countries. Great Britain had a good system of canals when the railway was perfected—and allowed them to lapse into slimy disuse. In the United States the Erie Canal had saved the west, and canals were paralleling many of the streams leading over and beyond the Appalachian Mountain system, when the energies and the capital of the nation were diverted to the new Eldorado of railroading. To a greater or less extent, the same thing took place all over the world save in Holland and China.

How could the railways destroy the commerce of the inland waterways if the carriage of goods by rail is so much more expensive? A very pertinent question, but not a difficult one. The railway runs over hills and mountains, while the waterway can be constructed only where water runs or can be made to run. The railway ran to the heart of every village,

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while the waterway stopped at the waterside. The railway had freight houses and passenger stations with agents and attendants, while the waterway was allowed to offer nothing but a bare wharf, or an earth landing. In spite of the superiority of the waterways when their freight was once afloat, many of them were so badly off for equipment that it cost more to get freight up and down the banks and into the towns than the railway freight amounted to, high though that might be. Moreover, the railways had organizations, all more or less predatory and unscrupulous, and made active war on the waterways. The waterways had no fighting power. The railways could carry freight at a loss for a while between points affected by water competition, and make it up on traffic which was at the railway's mercy through lack of all competition. So by ways various and devious the railways put most of the canals and rivers out of business.

The world is coming back to waterways, and the future must see to the utilization for

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commerce of every stream which can be made to furnish water for locks and dams. When the world is fully developed, the stream which is not also a waterway will be the exception, and not the rule. The railways will be operated for the main purpose of getting the heavy freight to the nearest water, and there setting it afloat. The streams will be developed as a national system, with standard depths, and capacity of locks, to accommodate standardized water craft. Every riparian town and village will have its harbor, equipped with freight-handling machinery which will render cheap the cost of taking on and discharging freight. Railway cars will be made with detachable bodies, built sometimes as a whole, and sometimes in sections, so that either in car-loads or smaller lots, freight can be lifted by cranes in a moment from rail to boat or boat to rail. The whole carrying trade of the world will be reorganized on the basis of making the railways the carriers of passengers and of packages and perishable freight, and the connecting links between

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waterways. The heavy slow work will fall upon the waterways as a matter of course.

This is not altogether a prophecy; for there is scarcely a civilized nation on earth which is not planning to do in whole or in part exactly what is here suggested. Nearly all of them are far in advance of the United States in this field of progress. Everywhere it is recognized that the principles here enunciated are correct.

The ultimate needs of the earth's children can not be served by railways, except as to the light traffic and the short distances. In the last stages of development the great nations of the present, with their huge cities, must either decay from having been exhausted of their natural capacities for supporting the peoples constituting them or their people must migrate, or they must carry over long distances the coal, the ores, the timber, the phosphates, the nitrates and the potash which are the basis of life in civilization. All these are heavy cheap things which must be moved cheaply, even though slowly, if they are moved

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at all. In those days the phosphates of the world will come down the canalized Missouri, and down the locked Columbia and his head streams, while the railways will be used only as tramways for bringing Crusoe's dugout to the water. Similar developments will take place all over the world. The waters will carry the great bulk of the freight.

CHAPTER XXX

THE WATER COURSES

ONE of the most splendid works ever erected by men for making efficient use of the earth, is the great dam at Assouan, Egypt. It is built to hold back the flood waters of the River Nile for purposes of irrigation. Our reclamation service has created nothing finer than this great engineering project, which spreads over whole provinces the waters from the Abyssinian Mountains, giving the crops of the poor Egyptian fellahs or peasants both food and drink.

But do the fellahs get the benefit? Let us see. The water from the dam is furnished principally to Middle and Lower Egypt and the province of Fayum. In these regions since the water has been available for the crops the land has paid an increased taxation of about

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\$5,000,000 annually. The cost of the works up to the time mentioned was about \$52,500,000. It will be seen that the taxation collected because of the values created by the dam amount to about five per cent. interest on the investment.

And most people will say that the government has done well in the transaction—for it is collecting enough to pay the interest, and perhaps a sinking fund and the cost of operation. But let us look deeper. The land in the provinces affected has increased in value because of the irrigation, from \$977,500,000 to \$2,438,750,000; and the aggregate rent has grown from \$81,250,000 annually to \$188,750,000. All these figures are approximations only, but they are correct as proportions, and show clearly that the British management of Egypt has by the building of this dam liberated from the desert latent values in the dry deck room of the good ship *Earth* amounting to over a hundred millions a year, for which it gets back in taxation only five millions. As for the fellahs, they are no better

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off. They must still pay for the use of the deck room on their own old air-ship. They may be glad of the increase in the number of jobs, the general progress of the nation may bring them pleasures unknown before, or moral benefits—or it may not; but this is the point I am making: The only people who receive money profit from the Assouan dam are the owners of the lands—who may live in London or New York, or Constantinople or Cairo; may use these huge profits to add new attractions to harems, or buy titled husbands for eligible daughters, or repair ancestral castles, or indulge in motor-cars or yachts. The fellahs are no better off while working on the new irrigation blocks than they were when laboring on the old Nile flood-plain. All the fellahs get, anyhow, is a mere living.

The water of the Nile was drawn up from the ocean by the ownerless sun, blown by the free winds over the lands, and lowered to the valley by the everlasting hills. The water did not belong to the landlords of Egypt. The dam was built by the government (which in

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morals belongs to the fellahs as much as to an equal number of pashas) by the expenditure of money raised on the credit of the labor-power of the fellahs. The dam, then, can not belong to the landlords of Egypt. And when, by the use of the people's money, God's sun and wind and the hills whence cometh the help, not of landlords, but of men, a hundred millions annually are created by a government is it not theft of the most iniquitous sort if the landlords of Egypt are allowed to collect and keep the hundred millions? Think what that sum would do for the fellaheen, if it were turned into the public treasury, as in good morals it should be! It would lift them out of their ignorance by means of schools. It would construct public baths and theaters. It would install easy and cheap transportation facilities. It would finance their agriculture through rural peasants' banks. It would hire agricultural instructors, and serve cooperative marketing plans. It would send colleges to the Egyptians and the Egyptians to college.

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It would do all these things, not by taking aught from the landlords which belongs to them, but by stopping the robbery of the fellahen by the landlords—for every penny of the hundred millions belongs in the high court of ethics to the people, and not one penny of it to the landlords.

Better than all these benefits that would come to the people by forbidding the landlords to take what belongs to all, the policy of justice would take from the landlords the profits which are the incentive to their monopoly of lands. The profits of landlordism being abolished, that ancient institution would itself fall, and the irrigated lands under the Assouan dam would be free to the fellahs—whose poverty would, on the day they became free, come to an end.

The Assouan dam is the type of every great public work which invites the collective energy of the people on the good ship *Earth*. We passengers have so arranged things that the better we manage, the more it costs us for room on the decks from which all mankind

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were evolved, and to which they must return. Our own reclamation works have created huge values which are lapsing into private hands by payment of the mere cost of construction—though that cost ordinarily—as in the case of Assouan—represents but a fraction of the values created. Let Washington and Oregon, for instance, clear and reclaim their stump lands by the only agencies which seem adequate—the power of the government—and the people's money becomes at once the creator of values which oppress, rather than liberate, the workers.

So it is all over the world. We may bring the sea to the farms by canals, and make of the interior city a port, and the landowners reap the profits. We might build and operate free railways for the development of the *Earth* as a dwelling for her passengers, and those passengers who own the soil, under the laws in force over most of the world, would be able to capitalize every cent of the benefits in the values of their lands. Tom L. Johnson, of Cleveland, paved the way for three-cent

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fares on the Cleveland street railways in the place of five-cent fares—but the people who lease houses along the street railway lines are not a cent better off for the reduction—the landlords have taken all the reduction in rents.

Let the floods be prevented by headwaters' control of streams, and the benefits to the swamp and overflow lands would more than equal the cost—but under our governmental systems in vogue all over the world they would not pay it. Let any improvement mentioned in these chapters be instituted, and the money of the people spent in public benefits will automatically find its way into the values of lands—to be paid over and over again to landlords who do nothing to help production, but much to halt it by their powers of appropriation. Is it not plain that before the world can go on with all the tremendous and needed works demanded by the welfare of all, some method must be adopted by which the values created by the expenditure of the people's moneys and energies may be secured to public and beneficent ends, rather than diverted to

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private and in most cases noxious ones? Progress waits the new system's birth.

There is a Hindu proverb quoted by Henry George which runs: "White parasols and elephants mad with pride are the flowers of a grant of land." The parasols become whiter and the elephants still madder with the pride of wealth when such a grant becomes the recipient of government favors.

And now we have come, by fifty ways, to the greatest question of all.

This great globular air-ship on which we are embarked on our voyage from birth to death, but to no possible shore leave or disembarkation, has been considered in these dissolving views of our relations to it and to each other, as the one thing of prime importance to the race. We are passengers on the good ship *Earth*, but we are also portions of the ship. Nothing is so important to us as our relations to it. The woman yet to become a mother is no more essential to the unborn than is the earth to human kind. How we shall live

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with reference to it is almost all there is to the material side of human life, individual and collective, present and prospective. The wick or dynamo is no more vital to the light than is the earth to us—and to every other animal and plant.

Just now we spoke of the Assouan dam, and the way its benefits have been seized upon by landlords. Sir Charles W. Macara, returning from a congress devoted to the question of the promotion of the growing of cotton was recently interviewed in the *Manchester Guardian*, and said of this same irrigation project: "It is of little benefit to the general community if most of the profits are swept, in the shape of rent, into the pockets of land speculators."

I wonder if Sir Charles Macara would have recognized in the every-day life of Great Britain, or if the reader will detect in that of his city, town, village or rural township the same universal presence, the same great evil which appears so strikingly in the case of the Assouan dam? It is more difficult to see the

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thing close to our own eyes, but once seen, this thing can never be forgotten. The man who is able to collect pay for the use of land always reaps where he has not sown, and eats his bread in the sweat of other men's brows. It makes no difference how honestly he may have come by the land, or by how much hard work, the case is the same. Land values are always derived from the labors and the presence of the community, and never from the efforts of the owner. I am not speaking of his improvements, his fences, his plowings, manurings, drainings or plantings—I mean the charge he is able to make for the use of the land as God made it.

Rent has always been the only permanent basis for a hereditary aristocracy or a leisure class. When the first man encloses the best bit of land, and says, "This is mine!" it begins to turn unearned wealth into the hands of non-workers and take the earned wealth out of the hands of workers. Through all history it has steadily worked to heave high the House of Have and to press low the House of Want.

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Its power to oppress the masses is now obscured by corporate organization of wealth, and befogged by the increase of tools and factories; but such things as railways, shipping trusts, manufacturing trusts and mining and lumbering trusts will be found based on land ownership so far, I believe, as they have much power to oppress.

When land falls into that absolute form of private ownership of which I speak, a wedge is at once inserted between the landowning and the landless classes, which every day's progress drives in farther, lifting the landowning classes higher and higher, and tending to press the landless lower and lower. It is an economic truth which is self-evident and undeniable, that as society is developed, and the use of land pushed nearer to the limit of the absolutely useless, that which is available for use, in city and country, becomes higher in price if bought and sold, and higher in rent if leased.

Farm land in the middle west of the United

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States may rent now for ten dollars per acre annually—some of it does. I remember when that same land rented for one-tenth of that sum. I have seen it leased for a quarter of the crop—now it can not be obtained for the half. Yet the land will not produce more now than then; the tenant has found out how to live upon a less proportion of the yield, and is forced to do the best he can on that.

Is a schoolhouse built? Is a church dedicated? Is a railway constructed? Is oil struck? Is coal found? Is a new crop developed? Do the people become less rude and more civilized in some remote region? In each and every case, in the case of any imaginable step in progress, it is the landlord who gets the money benefit. The case of the As-souan dam, instead of being a local condition, is universal, world-wide. It is time that the nations of the world gave attention to the development of some plan by which the deck room on the good ship *Earth* may be parceled out to those who must make local and exclusive use of it; without prejudicing or

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doing injustice either to those who may now be willing to be excluded, or to the unborn generations who can not be consulted, but who are born into the world with as good a right to its use as that possessed by the children of landowners.

The thing is not simple in application, but the principle is. This great *Zeppelin* belongs to all of us passengers alike. Let us think of it for a moment as a great floating hotel, in which some of us have the best and most spacious of rooms, some are stowaways in the hold, some have hammocks in the forecabin, some first cabins, some second cabins, some saloon staterooms. We all have equal natural rights in her—how shall our unequal occupancies be equalized? The answer would be given in five minutes by any good high-school student. He would say, "Let everybody pay rent for the room he uses, and divide the fund!"

Suppose it to be an office building, owned in common by its tenants. The drug-store in the corner on the street would pay a high rent

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to the common fund. The bank on the second floor would also pay at a high rate, as would the dry-goods store. The lawyers and doctors in the upper stories would pay upon the value of their offices, and the cubby-hole occupied by the struggling dentist near the roof would pay much less. Each would pay to all the value of the room from which he excluded all. Out of the fund would be paid insurance, up-keep, watchman, elevator boys, janitors, scrub-women, and all the taxes and expenses of the building, and the balance would be returned in equal dividends. No one would have any advantage over any other; the plan would be absolutely equitable, and so plainly so that it could not fail to be suggested by any intelligent business man to whom the problem of such common ownership with diverse and exclusive possession were propounded.

Now, in spite of all the complexities of society, and the hoary institutions hallowed by legend and ossified in the course of history—in spite of everything which can be urged against the statement, the earth is a great

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dwelling-place, owned in common, and occupied in diversity. The evils of the situation are plain, and the greatest step which can be taken to end them seems to me equally plain. The owners of land everywhere should pay to their co-owners who are excluded the annual rental value of the privilege enjoyed. Such a plan would furnish a fund in case of the *Earth*, as in the case of the ship or office building, which would pay all community charges, and the tenancies of all would be equalized. He who had most of the thing belonging to all would pay most. He who had little would pay little. He who had none would pay nothing. All would be equally benefited by the expenditure of the tax collected, all other taxes would be abolished, and absolute justice would be realized in the use of the earth. No one would, or could, afford to pay thus for the use of land unless he used it—and so monopoly of land would be destroyed. This is the political economy of the future. In no other way can the consciences

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of men be long satisfied in their tenancy of the decks of the good ship *Earth*.

Rent is the value which inheres in the exclusive possession of land. It is a natural and inevitable thing. It becomes oppressive only when it is retained in the wrong hands. It belongs in morals to all men because it is the expression in terms of value of the benefits the landowner receives through his exclusion of all men from a site which ethically belongs to all men. If he retains it as private property, he is given an unjust advantage over his fellows. Landowning, constituting as it does the royal road to wealth without work, attracts the seekers after privilege. Land becomes a commodity sought more for its unearned increment of value than for use. It grows in value through every element of progress—increase of population, increased efficiency of workers, improvement in government, progress in the arts and sciences, demand for land for purposes of speculation. Every extension of use to poorer and poorer land, adds to the

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value of the lands already in use—for the rent line is zero, and the land on which the Woolworth Building stands bears its incredible price because it is so many degrees above zero—which is land for which nobody will pay rent. As this zero falls, the values above zero are thereby lifted.

The transfer of this enormous and ever-increasing body of values to the possession of its real producers and owners, the collectivity, will produce the most revolutionary results. It is quite a different thing from the so-called "single-tax" of such dabblers in land-value taxation as Vancouver and many German and Australasian towns. In Vancouver the fiscal scheme of putting on land values the burden of present taxation only, seems to have produced a condition of prosperity. I have no doubt that it has; but I am equally certain that this prosperity will be short-lived, unless a social program is adopted that will absorb all the ground rents of the city. As long as land-value taxation is adopted as a mere fiscal scheme, with an economical administration

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exerting every effort to keep taxes down, it will always induce an era of prosperity which will finally prove self-limiting. The limit will be reached when land speculation springs up as it has apparently done in Vancouver, through the growth of rent above and beyond the limited tax.

But when the full-length principle is adopted, a social program must always be followed capable of absorbing all the ground rents. Under such a state of affairs, Vancouver will leave very little value in the hands of land-owners—under ideal conditions, none. Every one owning lands will pay the full rental value of them to Vancouver every year. It may be asked, Why, then, will any one desire to own lands? For the same reason that men now desire to pay ground rents to individuals—for the purpose of using them, and for no other reason whatsoever. All hope of profit from mere ownership will by that time have vanished, and land-speculation will be at an end.

The first effect of such a system will be the elimination of all speculative value from

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lands, and a fall in values to what lands are actually worth, for use.

Something like what has taken place in Vancouver will occur everywhere. Lands for use, being easily acquired, will be improved at a tremendous rate. The manner in which Vancouver swept past Seattle, Victoria, Tacoma and her other rivals in matter of building, as soon as she adopted land-value taxation, will be duplicated everywhere, as the human energies now repressed by land monopoly are liberated. And this condition will be permanent, if the governments adopt budgets which will absorb all ground rent, and thus forever inhibit speculation in sites.

Land will grow in value, with increase in population—it will grow in value over much of the earth's surface with great rapidity. Every increase in human efficiency will make more valuable the sites on which this efficiency may be exercised. But this advance in land values will not result in land-booms as in the past, nor will it enrich individuals. It will express itself in the payment of more and

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more of the wealth produced into the coffers of the government. .

As the years pass, and the rise in rents continues, our government will therefore become more and more socialistic. That is, the line properly dividing individual property and, hence, individual action from collective property and action will be constantly advanced toward collectivism. Even to-day, if such communities as England, Holland or New York were to transfer bodily to the public coffers all their enormous ground rents, such a proportion of the produced wealth would go to the common fund that the proper administration and use of it would socialize the state to an extent realized by very few either of the advocates of land-value taxation who call themselves individualists, or of those socialists who regard it as likely to produce only unimportant results in the evolution of a new social order.

CHAPTER XXXI

POVERTY VS. MONOPOLY

IN these writings concerning the fate of those on board the good ship *Earth* we first sought the basis of life and found it in the soil and the water under certain conditions of climate.

We then weighed the elements of food and found the old planet provided with all that the passengers are likely to need if the terrestrial stock of the goods of life is properly conserved and used. We looked into the question of the use and the abuse of the treasures of our ship's hold and decided that the self-evident truth that they belong to us in common must be recognized and made effective to every man through institutions if the gross evils from which we have always suffered are to be remedied. These institutions can come through the activities of one form of govern-

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ment only, and that is democracy; because it is only in a democracy that the ruling class as a whole is selfishly interested in the reign of the principle of equality of rights and opportunities.

In other words, the welfare of all men must be attained, if at all, by the rule of all men.

Universal welfare means, first of all, the extirpation of poverty. Many things must be added to that, but that comes first in any rational scheme of social redemption. Souls are, no doubt, more important than bodies; but the bodies which are not fed, all over the world, are those in which the souls are darkened and the spirits dead. Millenniums, like armies, march upon their stomachs.

I have looked upon monopoly as the cause of poverty. It seems to me that the poverty with which most of us are familiar is clearly due to monopoly, and to that alone. The monopoly of land turns into private hands all those stupendous rivers of wealth which would be distributed to all men if we as a people received each year from those who exclude us

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the value of the privilege in such monopoly. This seems to me to account for all the poverty we have, at least we of the western world. In other words, it seems perfectly clear to me that we could carry all other parasites, though of course we ought not to do so, if we were rid of the exactions of those who own our city lots, our water-fronts and terminals, our forest lands, our mineral lands, our power sites, our factory sites and our agricultural lands.

Moreover, if all the other parasites were exterminated, the land monopoly would at once swallow up the benefits of the riddance, and we should be no better off than now, save for the simplicity of the situation.

But in addition to the basic monopoly of the decks of the good ship *Earth*, there are a thousand other monopolies. There is the great semi-land-monopoly of the railways. There are tariff-bred monopolies. There are the little fly-bite monopolies of the patent office. There are money trusts and shipping trusts. There are huge aggregations of tools like those

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of the steel trust. Some say that the ownership of tools would alone enslave the workers. This may be so—but common ownership of tools would do the workers no good at all so long as land is monopolized. Until that underlying monopoly is abolished and a just system of land tenure put into effect the success of those who seek better things for the masses will serve no good purpose except to strip the disguises from the great robber “who takes all that is left,” no matter how much it may be. A just land system may open the way for the cooperative commonwealth—which, if erected upon our present land system, so far as it succeeded, would only enrich landlords. The workers of Ghent have established the cooperative commonwealth in almost everything save land; and have made their landlords richer than ever.

Cooperation is an improvement in production. By it the middlemen are eliminated, duplication of labor is lessened, division of labor is increased, production is systematized; but no possible perfection of cooper-

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ation can hope to do as much in the line of cheapening the things needed by the people as has been done by the progress and invention of the past two hundred years, in science, the arts, in transportation, in finance, in the opening up of new lands, in labor saving machinery. In the absence of a just system of land tenure these wonderful advances have failed to help the masses to a free and unfearful life—but rents have gone up enormously, and the purchase-price of lands has soared. So with the cooperative commonwealth—it will be an improvement in production; but we have had a hundred improvements in that which have done the workers no good; it will simplify distribution; but no more than the railway and the steamship and the dynamo, none of which has lightened the burdens of poverty; it will prevent duplication of effort, but so do the trusts. With a just system of land tenure the progress of science and the arts would have abolished poverty; and with such a just basis for life, the cooperative com-

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monwealth will carry us to heights we can not otherwise attain.

With monopoly abolished, and with society organized on the basis of a fraternal democracy, will poverty be at an end?

Unless it is at an end, our social travail will have been in vain. We shall have opened the natural opportunities which the earth offers freely to all. We shall have so organized exchange and distribution as to eliminate all possible wastes. We shall have ended the system by which one man makes a profit on the labor of another. We shall have secured to every worker the full product of his labor. And we shall have made labor universal.

Poverty could not persist under such conditions, except as the result of the multiplication of population to the point beyond which the earth is unable to support the people. Universal comfort, universal education, universal enlightenment, the complexity of life which so highly developed a society would necessitate, would tend to cut down the birth-rate—

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just as it is now cut down in the most "comfortably-fixed" portions of society.

But the extirpation of monopoly must go along with general enlightenment, not only in the nation, but in the whole world, or there will always remain those world slums in which the unfit breed and spawn in poverty and ignorance. I do not believe that there is much danger that we of the United States, of Great Britain and Ireland, of France, Germany, Italy, Austria—of all the most advanced nations of this age—will fail to redeem ourselves from monopoly and its consequent poverty, and to attain a balance of births and deaths, long before we have out-multiplied our means of sustenance; but I do think that in Asia, in Africa, and in some parts of Europe there are great peoples who are already near the limits of subsistence, or even pressing against it, or so low in development as apparently to require ages to reach the point of decreasing fecundity. Some of these have beliefs concerning the desirability of large families of children which are recognized by

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such statesmen as Yuan Shi Kai as barriers to improvement in circumstances. It seems to me that along with our own problems, we more fortunate passengers on the good ship *Earth* must assume the burden of lifting these nations up. Otherwise our very millennium will be their opportunity to overrun the world in sheer weight of numbers—and plunge it lower than ever in hopeless poverty. Or we may be presented with the awful alternative of racial submergence, or the segregation of these unfortunate races from the rest of the earth's peoples forever, by force of arms.

CHAPTER XXXII

THE NIGHTMARE OF MILITARISM

THERE is a widespread feeling that the nations of the world are about to abandon the policy of maintaining armies and navies. The conscience of the enlightened people of the world is in revolt against wars. The common sense of the masses who furnish the food for powder is now directed to the question of motives. "What is there in this fight for me?" is in the minds of more and more men of military age every year.

The competition between the British Empire and the German Empire in military armament is a heart-breaking struggle, like that of two athletes breathing hard on some bitterly contested field. These great peoples are making the pace; but there is no great nation which is not enrolled in the tremendous event. Russia's army and France's army and navy,

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are the right and left wing of the forces of the Triple Entente, with Japan's in reserve. Italy is grinding her people into the very dust of poverty with taxes for the support of Germany's left wing, and Austria-Hungary is straining every nerve on the kaiser's right as the forces of the Triple Alliance pass in review. The Balkan States have been armed camps for years in preparation for their assault on Turkey, and will be for years to come. Even decadent Spain, the strictly commercial Low Countries, little Portugal, and neutral Denmark, Switzerland and the Norse countries are carrying their loads of militarism.

A statement recently cabled to this country from Germany shows something of the terrible burdens of "military preparedness". Privy Councilor Schwartz, feeling called upon to repudiate the assertion that Germany is forcing other nations into this competition, shows that his empire is paying out less in proportion to her population than Great Britain and France. The casuistry in this is perfectly plain, since the weaker nation in popu-

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lation might feel obliged to make up for lack of numbers by excess of ships and guns. Certainly, military preparedness is not a game in which weakness in one respect can be urged as a reason for weakness in any other. But the fact that since 1881 France has spent \$500,000,000 more than Germany is a startling preparation for the assertion that in the last thirty years the Triple Entente—Great Britain, Russia and France—has spent more than eighteen thousand millions of dollars, while the Triple Alliance—Germany, Austria and Italy—has expended more than eleven thousand five hundred millions in militarism.

The people of Germany, according to this statement, will be called upon to pay five dollars and ninety cents per capita for militarism in the present year, while every man, woman and child in France will contribute seven dollars and fifty cents. This seems to be exclusive of the milliards of bonds which bear interest now, and at some time in the future will necessarily have to be taken care of as to principal, unless the masses bow under the

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permanent yoke of an interest-eating leisure class.

This present-day militarism is a mixed question of pseudo-patriotism, actual national necessities and high finance. There is no question that in some cases the nations are now, and for centuries have been, in the position of making choice between national extinction and preparedness for war. What would have happened, for instance, to France, two hundred years ago, had she failed to maintain military readiness against the aggressions of England? Or of Holland as against Spain? The state of the smaller nations of Europe to-day would be no less perilous, were it not for the mutual jealousies of the government trusts, and the spread of internationalism in sentiment in such ways as peace societies and socialism. Sweden and Norway are coveted by Russia in her age-long desire for a seaport free from ice. Denmark and the Low Countries seem to the Germans logically parts of their great empire. Panslavism looks in the direction of a union of all the Slavic peoples

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—probably under the czar. Alsace-Lorraine has scarcely become completely Germanized. The Poles aspire to a restoration of the kingdom of John Sobieski. In fact the whole European situation is held in *statu quo* by the force of standing armies and huge navies.

All this is the effect of perverted patriotism—that patriotism which is more vice than virtue. No inhabitant of the German Empire would be better off were the Low Countries and Denmark absorbed. The desire of Russia for an ice-free port is a legitimate one, and should be fulfilled by the opening of the narrow seas past Constantinople, and by free trade to and through the seaports of other lands. The people of Alsace-Lorraine are as well off under one flag as another, given just government, and under industrial and trade freedom would feel as contented. Poland is entitled to freedom as a matter of justice, but would soon forget her aspirations if given just institutions under the flags now floating over her. The desires of subject peoples for

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governments of their own are based upon very deep and powerful instincts, and where it is territorially possible, might be granted without loss to their present yoke-fellows; but where industrial exploitation is absent subjection is neither profitable to the governing class of the ruling nation, nor permanently offensive to the people absorbed. And in such cases as the Greek, Bulgar, Serb and Rumanian populations of the Balkans separate governments are impossible owing to the scattering of the original stocks and their mingling with one another. It is a perverted patriotism which would arm one against the other in the name of nationality. Just governments *inter se* are the only solution. It is perverted patriotism which arms the English against the Germans or vice versa, because neither has anything which the other needs, and neither is possessed of a legitimate ambition in the way of which the other legitimately stands. It is a case of the ruling classes working on false patriotism for selfish ends. The common

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man has no interest in these objects, and the national welfare is not truly concerned therewith.

This pseudo-patriotism is dear to the hearts of millions who merely know no better. Moneyed interests of the most enormous extent are built up on militarism and the objects of military aggression. There is no good to the German people in African or Asiatic expansion; but there is money in it for German capitalists. There was no benefit to the people of Belgium in the Kongo, but King Leopold became a millionaire out of it. There are rubber and ivory, and sugar lands, and inoffensive and feeble peoples to be enslaved for the ruling classes of the aggressive nations, and loss for the nation at large: loss of life, loss of honor, loss of humanity, loss of every sort. When these things are thoroughly worked out by the masses, the average man will ask himself, "What is there in this for me?" and this phase of false patriotism will be ended.

The moneyed classes are interested to an enormous extent in the loans of funds for the

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up-keep of militarism. The names of Rothschild and Morgan are synonymous with government loans. These gentry verily do not burn incense on the altars of patriotism for naught. And while lending money for armaments, they are making money out of the building of armament. The money the house of Morgan loans to a government for war-ships is paid back, less commissions, interests and profits, for the ships built by the steel companies owned by the house of Morgan. Krupp is the typical German millionaire, and the Krupp millions come from cannon and war-ships. These are the merest hints as to the manifold moneyed interests that feed and fatten on the policy of militarism. When the masses acquire the habit of asking themselves, "What is there in this for us?" the incitements of this class and their fuglemen to war and preparedness for war will no longer thrill our young men into khaki.

And yet, I do not see the end of militarism. I believe that the militarism of the present day is ninety per cent. without logical excuse;

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but I see also a possibility for a readjustment of militarism to conditions under which it will be justified in the minds of the masses who ask themselves, "What is there in it for me?" I wish I could see the way to universal disarmament in the near future, but even should internationalism obtain control of the military nations of the world, I am unable to see more than a lull in the storm and a readjustment of factors.

The Balkan States were justified in maintaining a state of preparedness against the Turks, unless we adopt the theory of non-resistance. There may have been high finance and false patriotism commingled with the real justification; but the presence of the Turk encamped in military tyranny over the Balkan peoples constituted an intolerable status. It was a case of forcible commingling of irreconcilable human elements.!

The world as a whole is in an unstable condition as to the distribution of the races over it. Some European nations are said to be overpopulated. Probably in most if not all of

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these cases the disease is land-monopoly, rather than over-population. But land-monopoly and social maladjustments produce prematurely all the phenomena of pressure of population, and make the peoples equally restive for new lands. It matters little whether the pressure on the people of Russia, Poland, Hungary and Italy is factitious or natural, as long as it drives them to foreign lands. If factitious, it could be cured by reforms at home, as the tendency to emigrate from Germany, Scandinavia and the British Isles has largely been cured; but as long as it lasts, it sets up immigration problems in such nations as Argentina and the United States, to which the emigrants are flocking.

Such commingling of populations, without any racial affinity, and bringing into conflict possible racial antipathies, are of less consequence under autocratic governments than in democracies. In view of the fact that democracy seems to be not only the natural form of government, but the form which is conquering the world, racial admixtures are sure to be-

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come more and more fruitful of governmental problems. The fact that the countries now most clearly over-populated are peopled by races possessed of weak affinities, or none, for the democracies occupying the largest areas of sparsely-settled land and offering the most attractive industrial prospects, and moreover, feel certain strong antipathies for them, is ominous. The democracies of the New World and of Australasia will be forced by the law of national self-preservation to keep out the millions of folk of other colors and alien ideals who are ready to be shot into their respective bodies politic by the force of economic stress, like a drug into a vein by a hypodermic needle. They must do this. Their precious experiment in democracy requires it. They have good reason to believe that in fighting against national dilution and contamination they are battling for a principle as important to the colored races as to the white—a world principle.

Can universal disarmament be brought about while this condition persists? It seems

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to me very doubtful. It seems to me that the time is rather far off when the masses of the people will be able to disclaim interest in a certain sort of military preparedness.

I should not be willing to disband our armies and stigmatize military training as the silly thing it would be if there were no better excuse for it than the European balance of power, or the extension of trade. I should be afraid. Until this enormous matter of the distribution of the races is settled, we shall keep up a certain sort of militarism, be sure of that.

The question is likely to be: What sort of militarism? All institutions must sooner or later be transformed so as to accord with the principles of democracy—or they must be abolished. The great objection to standing armies is their conflict with democracy. They are essentially aristocratic in their traditions. The officers must always be “gentlemen” and the privates merely men. The social superiority of officer over man is something enormous. Every day’s service tends to make the man in the ranks a servile creature, and the

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man with epaulettes a snob and a tyrant. Moreover, armies are used by the capitalistic governments of the world for the purpose of overawing the masses of the people—the voters. The republics of the world are founded on what has been called the sacred right of rebellion; but they have set up in their midst standing armies to take away that right from the present generation. When one considers that rebellion is always a demand for rights, this situation is anomalous.

But the army need not be undemocratic, nor out of touch with the sentiments of the masses. It may well be the masses. Some of the most efficient armies the world ever saw have been democratic armies—Cromwell's, for instance. Obedience on the part of the rank and file to the officers need not imply any social chasm between the two.

Democracy requires that the army be democratized. This implies no slackening of discipline, but calls for a revolution in ideals. The army of a democracy should offer a serv-

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ice in which the best young men should be glad to enter. There are certain military organizations membership in which, owing to certain flubdubbery, is a social honor. Membership in the army of a democracy should be made so useful to the soldier, and so beneficial to society as a whole, as to be looked upon as a thing to be desired by all young men. Rank should separate men only while on duty. The whole organization should be based on the idea of educating the soldier in citizenship and developing him as a producer and a man.

This change might easily be effectuated. The life of the soldier under most military rules is of all lives the most dreary and deadening. The time which he can profitably use in the practise of soldiership is only a small portion of the day. The regulations have therefore imposed upon him a great many arbitrary duties which have no real relation to mastery of the soldier's trade, but are meant to keep them busy and out of mischief. They are about as useful as the old task of pounding

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the rust off the anchor chains which strict sea-captains imposed on their sailors during fine weather.

The armies of democracies should be the greatest educational institutions of the nations. Instead of wasting their youthful years in time-killing, soul-killing routine, the soldiers should be also students. Every course of study now given by universities might be mastered by the citizen soldiery. There is no branch of learning that should not be successfully taught in the army posts of the future. The culture thus given might be evidenced by degrees as honorable and valuable to their possessors as those conferred by any educational institution in the world.

In the main, the training in the armies will be vocational and technical, however. There is no reason why armies should not grow their own subsistence, and manufacture their own equipment as a part of the vocational training of the citizens of the republic. There is no reason why scientific agriculture should not be taught to every farmer's son fortunate

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enough to get into the army—and to every city boy desirous of getting back to the land. There is no reason why every handicraft, every profession, every art, should not be taught to men earning their educations by service as soldiers. There is no reason why graduation from the army should not be proof of fitness for productive citizenship, and the best possible recommendation to prospective employers.

Such an army would be only a little more military than are some of our corps of college cadets. Such soldiers would not require pay. They would be willing to pay for the training, rather than be deprived of it.

England might keep a million men in camp all the time by such a system. And they would melt back into the industrial system of the land at the rate of a quarter of a million a year, and repay to the last penny the expense of their education in their greater industrial efficiency. The United States could keep two million young men under arms all the time, and the burden would really be only a part of

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the universal duty of education. Gradually in both these nations, and in all others adopting the system, the thing which Frederick the Great accomplished in Prussia would be manifest—the citizenship of the nation, as a whole, would be transformed into a body of trained soldiers. Thus, and in some such way only can democracy and military preparedness be reconciled.

The problem is one, not of offense, but of defense. This sort of militarism is merely a matter of preparedness against the aggressions of other peoples. Those aggressions are likely to take the form at first of protests against the exclusion of emigrants. Such exclusions must be reasonable, but when determined upon, they must be firmly adhered to. Adhesion to them requires no aggression, no expeditions to foreign shores, nothing except the ability to defend ourselves.

Such militarism will be a matter of fortifications and artillery, with a mighty army backing them. Naval disarmament seems quite out of the question for some nations, but

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is not irreconcilable with the principles here laid down, save for widely disseminated peoples like the English. For them the matter is exceedingly difficult. Under present conditions pseudo-patriotism, high finance and a scattered Englishry render naval disarmament impossible.

But at bottom navies are instruments of aggression, and will not be needed on any such scale as that on which they are now maintained, when military power is used for the one purpose of self-defense.

The kings of finance may not always care to furnish funds for great navies. They now prefer a situation in which there shall be constant preparation for war—for they make profits on that—but no actual war. For in actual war the money power, furnishing funds for both sides, is in the position of placing bets on two contestants and taking a commission for the work, with the possibility of becoming so deeply involved that if one side becomes bankrupt the money power will lose enormously. The whole matter of moral obligations as to

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the payment of bonds issued under the circumstances now prevailing must sooner or later be reexamined. One of these days public credit will not be so high. Navies are shockingly costly things. The development of aerial navigation is about to revolutionize war, and seems to promise a permanent transfer of headship in war from the nation leading in sea power to the one with the most powerful air navy. When the air-ship renders the man-of-war obsolete, military operations will shift from sea to land, and navies will sink in importance.

CHAPTER XXXIII

SOCIAL OLD AGE AND DEATH

NO belief is more generally accepted than that which assigns to nations periods of birth, youth, maturity, decline and death. We speak of the Americans as being a "young people", and the Chinese and Japanese as being "old peoples". We seem to carry in our minds a thought with regard to the United States, or Germany, or England, that each must in the nature of things pass away in a sort of social death, just as Hiram Perkins, Hans Schmidt and Thomas Atkins must pass away.

This is a most important belief—important if it be true, and equally important if it be false. For the decline of a people, like the senility of a man, absolves it from the obligation to be strong and prosperous. If bad government, pauperism, prostitution, evil man-

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ners and morals, poverty, plutocracy, oppression and industrial slavery come with the old age of a nation, just as baldness, weak knees, bad teeth, asthma, defective vision, palsy and accumulated capital come with the old age of a man, then what is the use of resisting these things?

Enormous inequalities in the distribution of wealth and power have arisen in the United States in a century. I believe that we should not have been so submissive to those things, had it not been for the deep-seated belief that they come "as the country gets older" as a matter of course. To be sure, our whole theory of government as accepted by the masses was opposed to the idea of plutocracy on the one hand and industrial slavery on the other; but a governmental theory is no match for an ancient notion, so deep-seated that it almost loses the character of belief, and approaches instinct in its nature—and so, we have gradually been abandoning our governmental theory of democracy as a recipe for universal prosperity. It is only

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with the rise of the spirit of "insurgency" in the last few years that the onward march of submission to privilege has been checked and turned back by the old ideas embodied in the Declaration of Independence. Again the faith in equality is spreading and strengthening—not in America only, but all over the world. Is it a rising tide which will ebb as the moon goes down, or one "which yearly gains upon the shore", and merely has "ebb and flow conditioning its march"?

If nations are born but to die, then it will ebb, and ebb, and finally go out in the dead neap tide of decay.

We are a young nation, but are we really a younger people than the Japanese? Not at all. When the forefathers of the Japanese were savages, so were ours. They made a half-emergence from barbarism while we still roamed woods with bulls' horns on our heads, and won manhood by killing in battle. But they halted while we went on; and when Perry broke the seals of the Island Empire, we had already passed them in most of the

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qualities which make up real civilization. Once "older" than we, they had become "younger". As a matter of real truth, so far as we know, all men are of equal racial age—that is while we are not bound to accept the theory of any account of the creation in literal form, perhaps, we have no reason to believe that one people has any more advantage or disadvantage over another in years than if we are actually descended from Adam. No matter where we live or how, as a matter of hereditary descent one human being has as long a pedigree as another.

We are the cells that make up the body of the social organism. We are as short-lived and as long-lived in the "young" nation as in the "old" one. Human beings are alike in all phases of human history—or if different, the differences are too slight for the historian's measuring instruments. When the Roman Empire staggered down to its fall like a great, magnificent, dying beast, it was composed of the same sort of men who lived under Numa Pompilius. No change takes place in the in-

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dividuals composing a society which prevents the organization from achieving a life as long as the endurance of the earth itself.

There is no analogy in nature, either, which would lead us to expect a beginning, a culmination and an end of a people. The bird societies of the islands of the sea last forever. The community of muskrats in a Minnesota swamp has lived just as it lives now since before the building of the pyramids. The prairie-dog town which persists in spite of gun, trap and poison on the arid plains of the United States was a flourishing community when Columbus landed at Cat Island. If the earth continues to yield its food, the animal community, while its individual membership changes constantly by births and deaths, lives like the cataract, which, changing momentarily, is always the same.

Indeed, the human society in its simpler and more animal forms is almost as stable as the empires of animals. There is no infancy, growth, maturity and decline of the savage tribe. It goes on and on like a wolf

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pack or hive of bees. It is only the civilized society which waxes, wanes and dies.

Doctor Alexis Carrel has learned how to keep alive the cells of which our bodies are composed, outside the body. Bits of lung, liver, kidney or muscle, live and grow under his microscope. But not forever—for the cells rid themselves of substances which finally poison them and bring their lives to an end. It is the old biological story—no living thing can exist in the waste products of its own body.

So it is with nations, empires and communities—in some way, under civilized conditions, they secrete toxins which destroy the organism. These poisons are slavery, plutocracy, monopoly, inequality, exploitation, poverty, luxury, discontent, degeneration and finally national death. Doctor Carrel takes the growing tissue from under his microscope's cover-glass and cleanses it of its poisoned surroundings. Then he gives it new "tissue juice" in which to grow—and it becomes "young" again—it grows faster than ever.

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The problem which civilization has never solved is that of cleansing our body politic of its toxins, and thus keeping it forever young. That it can be done there is no reason to doubt. Civilization is natural or it would not be forever repeating itself in human history. We have not found the way to make it perpetual, that is all. The empire, according to universal laws of evolution, is beset by greater dangers than is the tribe—being more complex it tends more strongly to disintegrate. But, as man is imperiously bidden by instinct to form nations and states, he must, by the exercise of his reason, find out the way to build them on bases of everlasting prosperity.

The evils which wreck civilization are pretty well understood now. They lie mainly in the tendencies of men in communities to gain advantages over one another, and to use them to ends of oppression and exploitation. Society splits into two antagonistic wings—one composed of rich and powerful degenerates, the other of poor and destitute degenerates.

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A new era has dawned. We have still these two degenerate wings, but we have an immense middle class, and permeating all classes, we have a new science, a new love of truth, a new altruism, a new social conscience and a fund of arranged knowledge greater than that possessed by all other ages combined. We shall find the right way of collective life, this time, and a blessed immunity from the death that overtook the civilizations of the past.

CHAPTER XXXIV

THE GREAT MIGRATION

NOTHING is more peaceful than the status of the passengers on a great liner after all the space has been assigned to those having the right to it, all conflicting claims adjusted, and the floating community has settled down into stable conditions of the voyage. The little planet goes smoothly on bearing its load of humanity and comes prosperously to its slip in the harbor, with not a breach of the peace, nor a jar in the personal relations of the thousands aboard.

Up to this time in the world's history, the human race, as passengers on the good ship *Earth*, have been working out in blood and flame and tears the questions of the allotment of space. The mystery of creation seems darkest in the fact that there was no booking office through which the matter of accommodations

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could be amicably settled. We came aboard by the fiat of development, only half human, altogether ignorant, knowing naught of the shape or extent of the huge boat on which we sailed; and ever since this emergence into manhood we have been stampeding back and forth, slaying, burning, trampling precious things into the decks in migrations to new and better lands, and flights to new and worse ones. Tartar and Mongol, Hun and Vandal, Goth and Saracen, Angles, Northmen, Normans, Danes, Persians, Romans—a hundred names of dread and terror and romance and high emprise might be mentioned, which have sounded over the earth during the ages which have elapsed from the time when the Children of Israel spied out the land of Canaan, found it good and took it in God-bidden carnage, down to the times when Cortez and Pizarro did impossible things in Mexico and Peru; and on to to-day's onslaught of the Balkan States on Turkey in an incredibly brilliant effort to drive from the soil on which they believe themselves to

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have a just claim the unspeakable Turk who has harried and murdered and corrupted them for five hundred years. All these things are the little bustlings of the passengers on the good ship *Earth* in efforts to find their state-rooms, their berths and their nooks in the steerage.

These disturbances are not over. We are not half through, perhaps. We must decide all the problems which have been so hurriedly sketched in these chapters and many more. The issues of the Seven Perils of Humanity must be solved, by peace or war—and no one can tell how much of the one will suffice or of the other be required. But it seems certain that it will not be all peace.

But the hustle, the bustle and the quarreling are quieting down. We are getting organized. We know the ship better, now—in fact we have a diagram of the accommodations, and some facts as to the passenger list. There is abroad the spirit of citizenship of the world as against the narrow membership in the tribe, the city, the state, the kingdom,

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or the empire. We have passed in large measure from the family as the largest unit of society, through the tribal state, and on by all intermediate stages into the "trust" phase of government—and the names of the government trusts are the British Empire, the United States of America, Russia, Austria-Hungary, Germany, France and the like. There seems to be good reason to believe that we shall at some time attain the status of the universal trust in government—the parliament of man, the federation of the world—which may or may not be well for us.

Such a federation will be charged with the business of assigning space, conserving resources, eliminating world dangers, and putting an end to those awful tumults and oppressions which have marked the settlement of claims to space heretofore.

Will there ever be a real rest? Will the nations ever be able to accept their quarters as things settled "for all time"?

The conditions can never be permanently settled, because the earth itself is, and always

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must be, in a state of change. These changes will in the future force upon the human race the greatest migrations in its history.

There is good reason to expect that within a thousand years the climate of the whole world will be enormously warmed by the alteration in the air which we are bringing about every day by the burning of coal. There is some reason to believe that this change has already become perceptible. MacDowell, a British investigator, has determined that the last fifty winters have brought fewer frost days in England than any other fifty-year period since 1841—and the discharge of carbonic acid gas into the air from our furnaces which is bringing this change about has scarcely begun. The first great migration, therefore, will be into the now frozen north—Siberia, Finland, Lapland, Canada and Alaska. These will become great agricultural regions—if the expected change comes.

But this will be but an eddy in the stream of change, and will run against the secular change by which the world is cooling off and

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drying up. Sometime the warming process will stop. The cooling process which has been going on with certain alterations and disturbances since the earth was a molten mass—and long before—will reassert itself. Thousands of years hence, the frozen area about the poles will again begin to broaden. The timber line will begin to creep down the mountainsides. The great migration will 'bout-face and turn again from the poles toward the equator. The nations of the earth will perforce move southward from the north, and northward from the south, until at last, the peoples of the world will make their last stand against advancing cold and drought in a narrowing zone which will include Central Africa, Southern Asia, Northern Australia and the South Sea Islands; and the great rich Amazon, Orinoco and La Plata Valleys in South America—together with the West India Islands.

Along with this secular cooling will be a secular drying up of the earth by the fixing of water in chemical combinations, and its ab-

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sorption into the body of the globe. The deserts which will then overspread the regions now occupied by the United States, and Europe will be not only cold, but dry. The men of that day will again find themselves in a world over vast areas of which no explorer will be able to force his way; and poetry and literature will again be filled with the mystery of the unknown, as it was when Othello told Desdemona's father of the Hyperboreans and men whose heads grow beneath their shoulders.

These migrations are sure to come. They will be very slow—so slow that the movement will be imperceptible. And they will probably take place through ages of world regulation which will eliminate war, and of a decreasing birth-rate which will make poverty unknown, until the last men vanish in a surviving few pinched between the two advancing frontiers of the frost—men who will be great and wise enough to triumph over their fates, even while yielding to them.

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"Extremes meet!"

In this old saying lies one of the deepest of truths. There is a degree of "down" which becomes "up." Farthest east is the same thing as nearest west. Frost burns the flesh like fire. Great riches develop into a species of poverty. Learning, after long, long climbings, reaches the highest attainments and steps out on the same plane of humility with ignorance.

Emerson confesses to the fact that for years he brooded over the idea of his essay on Compensation, and longed to write it. I wish an Emerson would master the deeper meanings of the expression "Extremes meet", and give us an Emersonian treatment of it.

I am now seeking the secret of a perfect organization of the relations of the passengers on the good ship *Earth*—in other words, I am feebly questioning the heart of things as to the possibility of a millennium—not a millennium in which the lion and the lamb shall lie down together, save in metaphor, but merely a reign of justice and love in which there

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shall be no want, and no greed, no plutocracy,
no labor question and no idleness.

The millennial principle is found in the perfection of human selfishness. The universal law of human conduct is that all human beings seek to satisfy their desires along the lines of least resistance. In other words, every person tries to get what he wants in the easiest possible way. This was true when the wisest man was the one who knocked fruit from the tree with a club rather than to climb for it or wait for it to fall, or speared fish with a sharp stick, rather than to seize them with his hands. These sought to satisfy their desires in the easiest possible way. It is equally true of the missionary who dares disease and death for the heathen, or the millionaire who builds libraries, or that other one who donates his wealth to the spread of single-tax. It is equally true of the mother who drudges that her daughter may have lessons in piano or singing. It is true of the friend who takes obloquy and assumes undeserved guilt to shield his friend. It was true of Bishop Myriel-Bienvenu when

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he gave the candlesticks to Jean Valjean. It was true of Jean Valjean when he ceased to be a beast of prey, and because he had been so much lower than the bishop, had to rise so much higher. Each sought to satisfy his desires in the easiest possible way. Each man who does an act of unselfishness chooses it because he could not otherwise—or so it seems to him—find so close an approach to happiness.

The whole matter of popularization of justice lies not in a less avid struggle of men to attain their desires but in the changing character of those desires. When Jean Valjean set his foot on the little boy's coin, after having been given life and freedom by the bishop, he wanted that money; but when he felt the torture of the memory of what had been done to him and what he had done to others, and went running up and down the highways seeking the little boy that he might restore the thing stolen, calling, "*Petit Gervais! Petit Gervais! Petit Gervais!*" and finally breaking down in the awful cry, "What a wretch I am!"

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he wanted something else than money—something quite as necessary to human happiness as any material satisfaction. In both cases he sought to satisfy his desires in the easiest way open to him.

Unselfishness in the ordinary sense of the term, is as common as selfishness. Altruism is a quality of beasts as well as of men. The wolf who devours even his wounded fellow must practise a wolfish altruism when he hunts in the pack, and drags down the deer—he must not eat individually what has been hunted collectively. The cock calls his hens to the food he has scratched out, and does not eat until they come. The partridge flutters on pretending to be wounded, daring danger to save her chicks. And when one comes to the socialized animals, he discovers that the ruling passion of the individual is the service of others. If the word happiness may be properly applied to these little brothers and sisters of ours, who shall say that the highest happiness of the ant is not found in the public service? If so, the ant would be miserably

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unhappy if it served itself first. It also seeks to satisfy its desires in the easiest way open to it.

Human unselfishness rose to a higher plane and took on a steadier character than it seems to reach in the animal world, because of the long infancy of the young human being. Parenthood made altruism a habit with men, while it remained only an occasional passion with most animals. Thus the family was founded, and out of the family grew the tribe. The helpless baby has been the great civilizer of the world. It extended the passion for service beyond the limits of sex devotion. It made brotherhood and sisterhood a fixed relation. It opened to the human soul the unimaginable possibilities for happiness found in the service of others. Still men sought always to satisfy their wants in the easiest possible way—but as altruism developed, a new sort of want arose—nothing less than the desire for the welfare of others.

Unselfishness, therefore, is nothing but the satisfaction of a higher sort of selfishness. The

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instinct for it is deeply rooted and fully developed in all men. No long period of race-development is necessary for its flowering as the ruling passion of the race. Tyrants, criminals, monopolists, aristocrats and all who live on the labor of others appeal to the general good as their own reason for existence; and in doing so, they not only address themselves to a universal instinct, but they account for themselves to themselves in the only way that makes life tolerable to the normal mind.

There are many who take as their guiding political philosophy the creed that every man will serve his own interest when he knows what it is. They are right—he will; but his own interest lies in being happy. And his happiness is every day less and less capable of being satisfied with his personal prosperity, or the welfare of his family, or of the achievement of justice for his class. Class-consciousness is a good thing; for it spreads over a wider field than did self-consciousness, or sex-consciousness, or family-consciousness, or tribe-consciousness, or nation-consciousness, or

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empire-consciousness. But it is still too narrow to satisfy the human soul; and it does not satisfy even those who preach it. Most of them in preaching class-consciousness to the working people, step over the lines of their own class that they may find greater happiness in serving the largest class.

Selfishness is the universal rule of human conduct; and it attains its perfection in that wonderful flowering-out which denies happiness to enlightened man save in the happiness of all men. The type of narrow selfishness is found in the Hindu rajah who rides on his elephant "mad with pride" through streets filled with famishing people, and does not care. He keeps his wealth for himself, and carries "collops of fat upon his flanks" while their bones prick through the flesh. The higher type is the man who would feel such torture in the sufferings of others that he would die if he did not "sell all he had and give to the poor". Our millionaires are now writhing in agony—many of them—at the poverty which they see, and which many of

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them are beginning to admit, they cause. They begin to desire deliverance from the body of this death. The highest selfishness impels them to work for, or at least plan for, social justice. They are beginning to see the profound wisdom in that other old saying, "Right wrongs no man." They are beginning to see that when Jesus went to the cross He did the only thing possible from the standpoint of even the highest selfishness—as any one may see if he will try to imagine the Nazarene's acceptance of life at the sacrifice of his message to the world.

Society moves irresistibly on to its own perfection through selfishness raised to the plane of altruism. Through a perfected society, we shall achieve eternal social life. Out of the mud of selfishness grows through perfectly natural causes the redemptive lily of altruism.

CHAPTER XXXV

THE SOCIAL CRYSTAL

WHEN the net result and ultimate meaning of the social unrest of these modern times is discovered and laid bare by posterity, it will be identified in some new height climbed and held by the human mind. Our fixed and dominant idea is progress: but it is well to ask, progress toward what? We are reluctant to believe that the conscious aims which now seem to direct human affairs will be found to be those leading to our real achievement. This is an age of hammers and anvils, of molten, rolled, spun and cast metals, of grinding and mixing, of chaotic building and tearing down, of enormous battling forces. Our material progress seems like the rearing of a Babel tower, ambitious to reach the heavens, but going awry in multitudinous frustrations and futilities because of a confusion of

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tongues in our ideals and purposes. This must be because we see only the scaffolding, hear little but the noise and uproar of endeavor. The future will see the temple—some fair new fane of the spirit, some simple Parthenon in which a larger philosophy shall dwell.

Already the lines of thought seem converging toward a new focus. Listen to the parley of the systems of thought, as they clear the docket of reason's chancery of the old causes of bickering.

"God is omnipresent," says the theologian.

"The universe is God," says the pantheist.

"He is a spirit," replies the theologian.

"There is nothing," interposes the materialist, "but force and matter."

"What is spirit," asks the transcendentalist, "but pure free activity; force; energy divorced from its carnal bondage to matter; 'thought thinking itself'?"

"God is the one being infinite and eternal," rejoins the theologian, as if to close the case.

"Not so," responds the physicist, "both

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atoms and force are indestructible and eternal, and pervade the universe."

"Do you know what the universe is?" asks the astronomer. "We are beginning to perceive a little of its harmonies. It spins about us in a great whirl and vortex—not a formless chaos—of worlds and suns, separated by unimaginable abysses, but bound into a whole by lines of force acting upon matter. So much we know."

"And this immensity," says the physicist, looking up from his calculations, "has its micro-reflection in the dust-grain under our feet. If a drop of water were magnified to the size of the earth, its atoms would be dispersed through its space as bodies larger than bird-shot, perhaps, but smaller than tennis-balls. On knowing this, we at once conceive of the drop as a universe, with stars and planets, orbits and periods of revolution. And, moreover, see the parallel between the atom and the universe! Atoms themselves seem to be nothing but inconceivably complex systems of electrons, each of which is made up of an

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electric charge no more material than the light or heat into which it might be transformed. Thus we explain the solid matter of the globe itself, by explaining it away!"

"I said in Plato's time," speaks up the idealist, "that matter is non-existent; that there is nothing but force. Has the physicist, of all men, come to agree with me?"

"It does seem true," admit all the scientists, "that heat, light, every form of radiant energy, gravitation, chemism, electricity, magnetism, all are but modes of motion, and the universe itself a vast congeries of motions, and nothing else, acting by attractions, repulsions and stresses, under the rule of law."

"But," cries the searcher after truth, "I still find the old mystery! How began these motions? How was enacted this law?"

"Both law and motions," answers science, "come from the unknowable."

"Canst thou by searching," adds religion, "find out God?"

Both have come to the same point—the one through hunger for knowledge, the other

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through thirst after righteousness; and both are baffled by the same mystery.

What then, it is asked, have all these clashing systems gained by their eonian quest? Much, indeed. For one most vital thing, they have found out the identity of the object all have sought, and of the mystery before which all have bowed.

They know how causeless were all their quarrels; and this, we may believe, is to be the great gift of these times of ours to the race—the idea of universality of law and the oneness of things. All things will have been brought within the sweep of the law, and the law of nature identified with the law of God. So man will have but one duty: to discover the application of this law to any given case, and apply it. All codes and decalogues will be valid only as declaratory of this primal and universal law.

A farmer's boy once stood in a gentle fall of snow, watching the descending flakes as they

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turned the somber fields first to gray and then to white, and transformed trees and dwellings into ghosts. The mystery and charm of the first snow-fall filled his being with unaccountable happiness. At last he turned his eyes from the blurred landscape, and fixed them upon the white flakes resting in crystal perfection on the sleeve of his rough coat. Suddenly the dreamy eyes brightened into the fixed and definite stare of keen observation. He felt as does the explorer of some lonely island, when, in petroglyph, or in charred and etched bone or shard, or in half-obliterated track, he sees the evidence of human occupation. On the hairy sleeve lay things never observed by him before, things of symmetry and order, objects which seemed to bear the imprint of design. How came these starry and flower-like forms into existence? From what academy of design had they fallen, so softly fluttering to him from the abysses of space? The question filled and engrossed his mind, and lifted him to that plane where child and

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philosopher stand upon the same level in the contemplation of that order which is the soul of nature, or whose other name is law.

The snowflake in its manifestation of the tendency of inorganic matter to take on forms of order and perfection—one might almost say, to take on organism—starts a train of thought which leads inward to the atom, and to its newly-discovered unit of structure, the electron or sub-atomic corpuscle, with all the pregnant problems of their natures, and outward to the vast fields of life, and on to the circling stars. Inward to the atom—itself a galaxy, a stellar universe of orbs identical in all atoms: outward to the heavenly galaxy itself (perhaps an atom in some higher matter)—from the unthinkably small to the unimaginably great; everywhere we find the stresses and compulsions of law ranging all things in shapes and forms of beauty.

Our new conception of the atom as a system or plexus of systems of electric charges, and of nothing else, and of matter as merely a mode of

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motion, is not a figure of speech, or a poetic trope, but a cold and worked-out mechanical conception. This explaining away of matter, this resolution of all things to one, comes, not by way of the idealist or the mystic, but by the mechanician. It would not seem a strange thing to either of them, perhaps, could it be presented to a Plato, or a Berkeley; but to the modern scientific mind, and to our uninstructed senses, it seems, at first, unthinkable. For this reason, it may be, this most revolutionary of scientific conceptions has not as yet touched effectually the common thought. Its reactions are found, not in the whirlwind of trumpeted discovery, nor in the earthquake of controversy, but in the still small voice of cloistered research. Yet to this conception of the character of the unit of matter will run, I believe, all the roads of future thought; from it will radiate knowledge of all things knowable; and about it will form the simple and symmetrical unity of an all-embracing cosmic philosophy. Somewhere in the infinite deeps of matter is the indivisible

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something which bridges the gap between the two great categories of matter and force. In the qualities of this unit will be found the digits in which the quantities of things universal may be expressed. In units' place, we may for the present assume the electron; next the atom; then the molecule; above that the crystal; and somewhere here our scale begins to branch. Still in obedience to laws operative upon the lowest order, the line of the inorganic runs on through amorphous frustrations to the crystal, to those great masses which we know as the satellite, the planet, the sun, and finally to the great symmetrical whole of the stellar universe, that unutterable circle which comprises all of which we know, which sweeps about us in the misty remoteness of the milky way, and which in all human language seems least remotely hinted at in that old oath "by the splendor of God!" Here our scale ends, for very lack of human faculties for comprehending more, just as it terminated at the bottom because of a similar want of means for apprehending less, and perhaps, in

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either direction, for no other reason whatsoever. Grafted upon the inorganic, like a branch upon a tree, runs the parallel scale of life—in protoplasm, in cell, in individual. The great biological trunk divides into botany and zoology, and the latter climbs from protozoon to mollusk, to articulate, to vertebrate, to mammal, to man—that single blossom of the tree of life, the birth for which all things from the beginning have been in labor, the crown and glory of the cosmic plan.

In the light of such a philosophy, the wonderful analogies and parallelisms running through the whole universe may turn out to be more than accidental resemblances; and experiences which have been vouchsafed to the poet, the seer or the prophet, and regarded by the scientist as without the pale of real knowledge may attain recognition as glimpses of rarely-seen portions of the seamless web of truth. If all the protean forms of matter are merely variants of a universal form; if all forces are capable of identification with some universal force; if matter itself is but a form

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of force; if all motions are but the resultants of attractions and repulsions among similar units; if all states of being are mere evidences of equilibrium of stresses running through a universal medium; then we may, and it seems we should, expect, with increasing knowledge, multiplying evidences of this all-pervading kinship in things animate and inanimate. Spencer says that evolution is the integration of matter and the dissipation of motion, in a change from an indefinite, incoherent homogeneity to a definite, coherent heterogeneity—and the world smiles, and mostly fails to understand. Emerson says in his "Brahma":

"If the red slayer think he slays,
Or if the slain think he is slain,
They know not well the subtle ways
I keep, and pass, and turn again."

And the world smiles and mostly fails to comprehend. But when we once reach the center to which all ways converge, so that we may look at once down all the avenues of thought, we may see that the words of the

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transcendentalist are at least as exact and true as those of the synthetic philosopher. We may be able to see that the atoms in the crystals on the boy's sleeve, ranging themselves in lines of perfection, are acting in obedience to the same laws that seek to express themselves in human institutions, just as,

"The very law that moulds a tear,
And bids it trickle from its source,
That law preserves the world a sphere,
And guides the planets in their course."

However far short of comprehension of these basic relationships we may fall, however lacking may be pronounced even the evidence of their existence, there seems to me to be deep social significance in the fact that all through the universe runs the law that beauty and perfection, which are other names for order, are found in the forms to which all matter and force, by the very nature of things, strongly tend. We see this so plainly in the bodily organs and constitution of animals and plants that the mention of it is a truism. It appears still more beautifully, if possible, in

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those congeries of the social animals in which mutual help and cooperation have been evolved as the basic rule of successful collective life. And when we descend again to the snowflake on the sleeve we find the same law decreeing order and beauty in the relations to one another of atoms, proof of the very existence of which, while revealed to the intellect is denied as evidence to the senses. How then can there be any who, while admiring the polity of the ant-heap and praising the economy of the bee-hive, while noting with pleasure the fact that the atoms of lead and carbon and iron, if free to do so, will unerringly assume relations with one another full of order and beauty, yet deny that there can be any natural condition of human society in which every member would be in right relationship to every other member, and to the whole, and in which the total effect might be a state of justice, of happiness, of order and of beauty?

I have spoken of the futilities and frustrations of human endeavor and of collective human life, and of the conflicts and confusions

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which mar the social plan. While there is authority for rating man a little lower than the angels, there is woeful reason for confessing that whole races seem but little higher than the brute. In such, the compulsion of law toward more perfect order, toward the social crystal, is felt, but it is weak, and its results pitifully imperfect. True, the tribe is formed—an aggregation of social atoms, mutually aidful on certain sordid and circumscribed lines, but destructive of other tribes, and inwardly full of "flint and flaw." Other races of us there are bound by tradition and superstition, prone beneath the rule of men like themselves, the atoms crowded and jumbled together, their free path restricted, the vibrations of individual initiative so feeble that we despair of their state for its very lack of life.

In other races, like our own, we note with hopefulness the vibrant life of the individual, the enormous energy of the mass. The atom has a greater free-path range, and one might almost expect the formation of the so-

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cial crystal. But we see at work also the same influences which mar the impulse toward perfection in the lower races. Here, too, is superstition, and the despotic rule of man over man. The same quality which made tribe destructive of tribe, here makes the great nation destructive of the small, and fills society with the anti-social element of militarism. In order that these complex units, men and women, may continue to exist, they must separate from the rest of the material universe those things which preserve the individual—food, clothing and shelter. In this highest society, some produce more than they need and others produce nothing at all. Some of these latter are idlers because they are denied access to the material universe from which produce comes, and therefore can not be producers; others, because by certain strange conventions they are given control of the face of nature, and can force their fellows to produce for them. These things make for disorders, imperfections and frustrations, and the social crystal fails to form.

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Shall we, therefore, despair of perfection coming out of the Nazareth of human institutions? By all means no. Here is a green and stagnant pool, its waters full of the poached filth of the herd and the sty. Yet, we do not despair of the water; for we know that under right conditions its molecules will yield to law, and in snow or frost we see it purified and perfected. Here is a street of clay, a bed of horrible mire, repulsive to the eye and treacherous to the foot. But yonder in that piece of jewelry is the same clay in the form in which emancipated clay chooses to exist, shining in all the hues of the rainbow, an opal. In the soot which fills the air, we recognize some kinship with the snowflakes with which it sometimes mingles—only the soot is contaminative, smutchy, befouling. Yet, but give the soot opportunity, too, and see what it does: that monarch of jewels, the diamond, that thing of fire and radiance, the gem for which wars have been fought and crowns lost, so precious that such words as “Kohinoor” and “moon-stone” thrill us like poems—the diamond is

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only soot behaving naturally. The slum is the rotting pool of society, the sordid life of farm and shop and church, its bed of miry clay, the realm of counting-room and syndicate and parliament and congress its contaminative soot, but unless the reign of law and order and perfection ceases in human society, we should believe in its capacity to purge itself of evil and realine its units in those institutions which shall be the snowflakes, the opals, the diamonds of racial life.

There is every reason to believe that crystals are formed by reason of very simple atomic facts. Their shapes are manifold and wonderful, but it seems certain that lead sulphide crystallizes into a cube, water into a star or cross, and other substances into other forms (which may almost be termed designs) because of inherent necessities, just as the bee constructs its wonderful hexagonal cells because the insect's very nature and form forbid its making any other. So the social crystal must grow out of the simplest and most obvious relationships, tendencies and needs of

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life. These are such things as the union of men and women in race preservation and in the making of a living—family relations and industrial relations.

It must be when carbon undertakes to organize itself into a diamond that the birth of the gem takes place in the coming together of the smallest possible number of free atoms which can assume harmonious relations with each other. Its subsequent history is but growth. So it must be that the true marriage of a free man and a free woman ought, under proper conditions, to have a similar significance in the formation of social groups. Let all human relations be conceived as dissolved and the human race disseminated through some medium in which it could exist and freely move as the molecules and ions of a salt float in a solution, and the tendency toward organization would first manifest itself in marriage and the founding of families. The first family may not be a crystal, but the first social crystal seems certain to be a family. As families are ordinarily formed, by chance-

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made and conventional marriages, there is no doubt much in them of the mud and soot of imperfection; but so much of the crystalline as society displays is to be found in the family group or traceable to its influence.

Second only to this in determinative force upon social groups, and perhaps of primary importance after the first stages of social development, are economic and industrial factors. The first necessity of man is to make a living. In the beginning, the family group is also an economic one; but when tasks of magnitude are undertaken, when commerce and division of labor arise, and especially when the machine enters into the problem of production as an important factor, the family ceases to dominate the industrial field, the union of people in industrial groups rises to first place.

Is the gathering together of human atoms in the factories and shops of to-day social diamonds or social soot? One answer only can be given to this question. The social crystal is absent from our industrial life, and the trod-

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den clay of the pit of the labor market, foul with tyranny, oppression and vice is in its place. The units of which the masses are made up are crowded together without reference to their inward fitness or their real qualities of manhood or womanhood. Therefore there is no harmony or order, except an enforced order like that in welded iron. The atoms are thrust into place by the hammer of necessity, and the gracious compulsion of inner tendencies, or spiritual and moral forces has small opportunity to do its beneficent work.

The atom of which the physicist speaks must be regarded, in the light of the new knowledge, as very complex, and made up of myriads of electrons; yet in its outward relations it seems a very simple thing, so much so that many have supposed it to be a vortex like the ring of smoke from the smoke-stack of an engine, which, we know, has certain attractions toward, and repulsions from, other like and similar rings, and which, once set up in the frictionless ether, would be eternal in duration.

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But the social atom is that most complex of all known things, the human being. The attractions, repulsions and stresses which act and react among the units of society are so multitudinous that we fail to understand them, even when they are laid before us in all the glare of the light of the most recent history—as in the present political campaign or the last war. The simplest social phenomenon is complex; and as society moves on this complexity increases; for in human progress there is a change to a state in which each social unit is more varied in attributes and functions, and in which there are more sorts of units than in former states—a change toward a definite, coherent heterogeneity. It is not to be presumed that the human intellect will ever be able to formulate any set scheme by which social groups may be arranged, without violation of that complex nature which is beyond comprehension; yet the difference between man and other social beings is found in his intellect—bees and ants and marmots, by the compulsion of unreasoning instinct, live collective lives

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which command our admiration; but human society depends for its success or failure upon the moral and intellectual strength and progress of the social units. Man must work out his own salvation, individual and collective, using his intellect as the means and guide in so doing. The world is full of problems for him—the greatest of them himself; and that branch of the inquiry which has for its object the finding of the right way of collective life has been the one from which he has ever fallen back most baffled. History is a record of human endeavor like that which the sphygmograph makes of the pulse—the picture of a weltering rise and fall. Out of the unmapped gloom comes a tribe of barbarians strong in individual vigor and righteousness. The tribe becomes a nation. Arts and sciences spring up; and then comes decay resulting from failure to find the right way of collective life. Babylon, Assyria, Medo-Persia, Egypt, Greece, Rome—they all went the same way; and along the same worn path we may hear the footsteps of the Caucasian civiliza-

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tion of Europe and America of to-day. Man has not yet learned how men may live together on terms of justice—the terms which will be found in accordance with nature when her full law is read.

Just now it was said that it is not to be presumed that the human intellect will ever be able to formulate any set scheme by which social groups may be arranged without violation of that complex nature which is beyond comprehension. It is not to be inferred from this that the case is to be regarded as hopeless, or that the remedy is not to be found by and through man's intellect. It must be true that social salvation must come through the working of human intelligence; but not by any such "formulated scheme". Intellect may supply conditions for a rose garden; but the rose must bloom by the action of forces too subtle for the mind. In all man's mastery of nature, he studies principles and supplies conditions; but into the arcana of nature, he can not penetrate, and in her labors, her hand he can not force. He must not forget that he himself is

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but a bit of nature, and that the formation of a perfect human society, like the making of a perfect flower, must be nature's work, not man's. He must study principles and supply conditions in the one case as in the other, and faith and confidence are justified that when this has been done, universal and immutable law will do the rest.

He must study principles and supply conditions in the human garden as in the rose garden; and first among principles he must know that nature's operations must be along her own lines, and that her hand must not be forced. Once there was a man, the beating of whose heart was under the control of his will; but he controlled it to his own undoing, and died. Man is not wise enough to direct the digestion of his own food, were it confided to his wisdom, or the supply of air to his lungs, or to manage any other of his bodily functions. Neither is society wise enough to direct millions of things relating to the manner of living or working or thinking or speaking of its members. There are involuntary

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muscles, and nervous reflexes, and mysterious flows of force to which the vital operations of the body politic must be confided, as well as similar things in the physical body, and for the same reason—there is no collective intelligence capable of controlling or even comprehending these operations. Therefore, we see all civilizations breaking down in the abuse of the collective will, exercised in the direction of the taking away of the liberty of the individual. The crystal on the boy's sleeve could form only by the free action of free molecules. The diamond was formed ages ago when the conditions were such as to set the carbon atoms free; deprived of liberty, they form soot or coal. Sociologically, we are nearing to or departing from conditions making possible the formation of perfect social groups, just in proportion as we approximate to the state when every human atom shall possess perfect liberty.

And what is liberty? Here, I think, we need suffer from no lack of knowledge; for liberty has ever been the star by which great souls

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have steered their courses, and to its comprehension the greatest minds have striven.

"Ye shall know the truth," said Jesus, "and the truth shall make you free."

"By the law of equal freedom," says Spencer, "every man has the right to do whatever he wills, provided that he does not thereby infringe the equal liberty of another."

"Do not unto another," says Confucius, "that which you would not have another do to you."

"Whatsoever ye would that men should do to you," says Jesus, "do ye even so to them."

All these utterances are different statements of the same truth, the essential righteousness, beneficence, naturalness and necessity of liberty.

There is a widespread belief or notion that liberty was enjoyed by primitive man, and has been lost. This is an error founded upon an inadequate conception of the nature of liberty. Solitude is not liberty: it is deprivation. The first man, if such a creature can be imagined, never, therefore, possessed liberty. Liberty

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connotes, not only internal relations, but external ones. Association is as essential to human liberty as individuation; and man can never enjoy liberty except through society. The human atom has right relations—liberty—only when its path is bounded by harmonious influences emanating from its fellows. These influences being natural—that is, just and righteous—the social atoms will, under their guidance, of their own accord and by virtue of their natural desires, form the orderly groups which will tend to a perfect society.

Such liberty is not to be attained in the absence of such intellectual development as to make possible the placing of society under the control of factors capable of recognizing the need and essential importance of it. There is good reason to hope that the races most highly developed have now reached this stage. Such being the case, the question arises as to whether any part of the race has yet realized such liberty in its institutions. This question must be answered in the negative. The most that can

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be affirmed is, that the struggle for liberty has begun, and that an adequate conception and definition of it has been worked out and is slowly impressing itself upon the more intellectual portions of the more intellectual races. In people of the European type, religious freedom was at one time regarded as a sufficient realization of liberty; but when and where that was secured, much yet remained to do. Then civil liberty seemed the one thing needful; but in many countries an almost perfect condition of civil liberty exists, bringing only slight amelioration, if any. Government by popular vote is essential to liberty; but in nations like ours almost half the adult population, and in some nearly all of it, have their rights in this regard, and still the right condition of society as to social adjustments is unattained. Some further step is demanded for the conquest of freedom.

One further step and then freedom! Not alone freedom from king, from inquisitor, from suppression of thought, from civil disfranchisement; but freedom from the burden

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of labor without land, of travel and commerce without highways, from the hard necessity of asking for employment of other men or going workless. This will be liberty indeed, liberty hitherto unknown in civilization. This is the one step further which democracy must take, the impulse and power to take which is the prize of this last great battle of civilization, the fight which all past civilizations have lost. To him who, believing in liberty as society's only salvation, sees with what meager measure it has been meted to man by even the best of human institutions, the thought that we are so near to the crisis of this struggle, and that the day is so full of promise, comes charged with mystery, with sublimity—and with hope.

Go to that desert which has been an arid waste since before the first clod of the Nile Valley was stirred by plow or shell or sharpened wood, and know that the dust simoom-driven over its immemorial solitudes once was man. Delve below Troy, and Ilion under Ilion is found, since the burying of which a hundred Homers may have sung and been forgotten.

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We may look out through the spaces between the constellations and find velvet deeps beyond in which no star appears; for we peer out past the bounds of the stellar universe itself. But to the deeps of time comprised in our racial life we seem to find no limits. Fragments of forgotten peoples haunt remote regions; beneath the black mold of newly-discovered tropical forests crumble the walls of fabrics builded by races whom the ancient muse of history never dreamed. Dimmer and dimmer grow the traces, but year by year we find instrumentalities for reading them, until those civilizations which we once thought oldest now seem young compared with those whose vanishing shadows throng the perspective drawn for us by the newer knowledge, faint ghosts of peoples forgotten before the oldest traditions of eld were known.

The centuries lengthen into millenniums filled with racial struggle and endeavor and throe, with progress and achievement, and with universal failure at last. The right way of collective life was never found, and still re-

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mains to be traced out. It is only yesterday that men began consciously to search for it in their Platos' *Republics*, their Marxs' *Das Kapitals*; Their Mores' *Utopias*; their Bel-lamys' *Looking Backwards*, their Georges' *Progress and Poverties*, tentative designs of the ultimate social order, profiles of the first surveys of the right way.

The fact that this new upward step in progress, to which our efforts to democratize our institutions are only the prelude and preparation, is a step so transcendently vital in importance, and has for so long proven beyond the intellectual reach of the race, invests it with mystery and awe and inspires the thought that our search for it must be among the complexities and subtleties of some realm of thought now beyond our ken. It is thus that the helpless conviction comes so widely to prevail that ages of race development must precede its accomplishment. The hopeless conviction, I say, because history shows that progress stops, and civilization dies of failure to

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find this way, before any such race development can take place.

How much higher is the race now, in the power to master such subtleties and complexities, than in the days of Job or Moses or Zoroaster! If any higher at all, the progress is so small as to be imperceptible. The only thing to be said in favor of our age is, perhaps, that it has a larger proportion of persons in whom latent power is developed; and that we have accumulated a great fund of knowledge, handed down from generation to generation, and increasing in our hands by the compound interest of its own advantages, but the possession of which proves nothing as to inherent racial capacity. The Greeks of Plato's time were entirely capable as far as can be seen, of comprehending all our modern knowledge, if it could have been given them as it has been given, for instance, to the Japanese, ready-prepared and predigested. If the solving of the crucial problem of progress calls for a race development much higher than that of

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the civilizations which have failed, then is our condition hopeless?

Nothing remains to be tried except the freedom of the social atoms to form the social crystal, through real democracy. We have reached this knowledge by a process of elimination which has strewn the road of history with dead civilizations. The fateful forward and upward step must be a thing so simple that it may be taken by the intelligent decision of the common man through such democratic institutions as he now has, by means of such intellectual capacity as he now possesses, and such racial instincts and spiritual gifts as he has now attained, aided by his heritage of a great and growing fund of knowledge. The great minds may lead, but, in racial movements, only when and where the common minds have wisdom to give the commission of leadership. The march must be made in accordance with the enlightened choice, not of Platos and Bacons, but of the masses—both men and women. Therefore, he who looks for a solution of this unguessed riddle, should expect to find it, not in the in-

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tricacies of some labyrinthine and factitious social system, but in the relations with social organization of some simple and obvious truth, and clothed in that simplicity which all may comprehend.

Unless it comes thus it can never come at all; for no collectivity is ever wiser than the thoughts and instincts average of its members. Unless it comes thus, there can never be a reign of justice and of brotherhood, or a civilization not foredoomed to failure.

When the achievement comes, it may seem to many prosaic and even trivial. It probably will so come. Watching the movement of the kettle's lid is a prosaic and trivial thing, but when a Watt did it, it led to steam and electricity and transformed the habits and modes of living of a world. It was a thing of more real sublimity than the winning of Austerlitz or the losing of Waterloo. To some it may seem an anticlimax when it is said that this one upward step necessary to the complete ultimate triumph of justice, and the entrance of the race upon the long-sought right way of

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collective life, will have been taken when we shall have advanced to a state of industrial liberty. Yet the statement is only another way of saying that the body's demands are imperative, while the soul's can wait; or that before man can fix his eyes upon the heavens he must be freed from the compulsion which rivets his gaze upon the muck-rake of unrequited toil.

No one who has thought much upon the condition of the people of the world here or abroad can be startled by the implication that industrial liberty is still unattained. The crude device of chattel slavery is now almost everywhere abolished; but that servitude much more universal than it ever was has taken its place, can not be successfully denied. Labor is enormously increased in efficiency as compared with the past; but this increase results mainly in augmented power and wealth to certain privileged classes, mostly non-productive, rather than in better conditions among the people as a whole. The one conspicuous shortcoming in our progress is our failure to find a way of relieving the few of the blight of

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being forced by social maladjustments to rob the many, and the many of the blight of being robbed.

No man being robbed can be free; and no man being free can be robbed. Industrial robbery must cease with the incoming of industrial liberty. No worker can be industrially free who must buy access to the earth's surface of some other man. This is in the nature of the case the basis of servitude. Some change in institutions must be effected by which the right of every person to the use of the earth shall be recognized and harmonized with that assurance of permanent and exclusive private possession of lands which is necessary to industry and improvement. When man once sets himself to the accomplishment of this change, he will, happily, find the way laid out in every detail by the pioneers of thought. There is no need of discovery here, nothing but the acceptance of discovered truth.

This upward step will free production from the fetters of landlordism—and no one who has studied human history ought to be igno-

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rant of the fact that upon landlordism has been based every aristocracy in history, which had enough of vitality to become hereditary, or to plunder the masses in any broad and effective way.

As production is in large part made up of transportation, the reduction of the great highways of the present and future to the possession of the people, and the recognition of the equal right of every man to their use for travel and shipment of goods, are surely essential. There seems to me to be good reason to believe that when we shall have found the way of justice in dealing with land and highways, we shall have solved the question of industrial liberty. This much, at least, is certain: the liberty of the social unit, which is essential to the formation of the ideal social group, can not subsist in the absence of justice in land and transportation.

With the striking off of these two fetters, there seems to be every reason to believe that the body of man would be at last emancipated, and that industrial slavery would pass away;

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and that if there be any other cords binding it, they would be burst asunder inevitably by the impulse to get rid of these two. No one can be unaware of the deep import of this statement, if it be true. It means that we are actually in sight of the abolition of poverty—not only as a possibility, but as a condition which practical statesmen may hopefully strive to attain for this generation, by practical methods. It means that society, being freed from the fear of want, will rapidly lose that all-pervading greed which is another phase of that fear; for neither men nor animals ever hoard except under the compulsion of tendencies, either instinctive or mental, imparted by racial or individual experience of deprivation and need. It denies the often-repeated assertion of the necessity of a precedent change in human nature in order that these things may come about; for such a revolution requires changes in institutions only. And, unless the freedom and prosperity thus attained are to be self-limited by their own consequences, it implies, that with the advent of universal plenty will

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come a development of the individual and a state of general culture, such as we now see in the affluent and intellectual classes, in which that equilibrium of births and deaths will be brought about which Spencer describes as the ultimate result of race development. It would seem in the light of our own national experience in the formation, in the course of two or three generations, of just such affluent and intellectual classes from a poverty-stricken peasantry under the influence of a certain degree of industrial freedom, that, in the long ages which must elapse before over-population can possibly arise, except, perhaps, in the teeming Orient, we may confidently expect that the state of individual development and general culture necessary to such an equilibrium, will inevitably take place. It is the natural, the inevitable result of mental development. It is the manifestation in the field of humanity and intellect, of the universal biological truth, that the complete and unchecked development of the individual is accompanied by a decrease in fecundity.

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Nothing, therefore, beyond steps the necessity for which is already recognized in the racial consciousness, and for the taking of which the human mind has already made plans, seems essential, in order that the social atom may be set free, and that the formation of the perfect social crystal may begin. Does this mean that we are on the verge of the fabled millennium! Not unless man's conquest for every man of the mere brute needs of food, shelter and clothing constitutes such a millennium: and in the light of the progress toward the subjugation of nature already made, and the vast and accelerating increase of the efficiency of labor in the production of wealth, the thought that there is anything visionary or unattainable in *this* conquest seems absolutely inadmissible. But if, as the history of civilization proclaims it, the satisfaction of man's bodily wants marks only a point of departure for real progress along spiritual and intellectual lines, then the solution of the labor question, the abolition of poverty, the universal attainment to a "free and unfearing"

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life, must be regarded as nothing but the clearing of the ground and the opening of the way. We shall have free man, but man with all the vices, all the follies, all the limitations which have ever beset him; but he will be upon the high road leading in the right direction. The way will open freely before him, a magnificent and enchanting way, the way which seers and prophets and poets have seen and trod in the spirit, and which, at last, will be his to tread; but it will be a long way. For the formation of the social crystal like the making of that in the inorganic world, the element of time is an essential factor.

And here again our parallel seems in large measure to hold good. Yet one need not look for the illustration to the many-faceted geode only, with its eonian age, and its symmetrical jewels formed with geologic slowness by molecule upon molecule deposited one by one as the centuries rolled by. The field of crystallization furnishes more optimistic analogies. Sometimes a chemical solution will stand in its containing vessel with every condition

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apparently favorable to the formation of the crystal, which, for some reason, fails to take place. But drop into it the smallest crystal of the same substance, and the good example is followed almost instantly by the suspended molecules, and at once the atomic society is reorganized. Sometimes a similar effect may be produced by a sudden jar or shock, as when the spicules of ice dart across a tub of freezing water, as the result of a blow upon the tub. Perhaps the visit of Perry to Japan was a blow upon the tub, in a way. It may be that in most civilized nations a shock of some sort to existing institutions may be required to set the molecular forces in motion. But one is led to think that the long-delayed reorganization will be more apt to evolve by the benign contagion of some successful sociological or governmental experiment, the knowledge of which will be spread abroad by the press—the precipitating crystal dropped into the saturated solution of society.

To the question which asks just what will take place when such a social evolution results

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in social revolution, no definite answer need be attempted. In a state of obedience to the law of equal freedom, that which maintains itself must inevitably be in harmony with universal law, and therefore just, right and salutary; and all else will pass away of its own imperfection. The diseases of the body politic, like those of the physical body may most hopefully be treated by supplying the conditions which will allow nature to take its course. We may in both cases, however, anticipate some of the directions in which changes will take place.

Inasmuch as the most obvious maladjustments in society are found in the field of economics, it is here that we may expect the most marked and immediate innovations when the truer alinements of social atoms begin to manifest themselves. Public issues leading up to them will be joined on questions of the proper functions of government—between collectivism and individualism, as applied to specific matters. Under such conditions, the present tendency toward militarism and the building

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up of empires must surely be checked and turned back by the fact of political activities expending themselves upon internal affairs. Foreign relations, based as they are upon international hostilities and jealousies, must be transformed, if not greatly reduced in importance, by the growth of political parties of international scope, some of which are already in existence. Wars will be impossible between democracies in which economic issues of the basic sort are being fought out—as witness the attitude of the socialists in Japan and Russia toward each other while their nations were at war, and the anti-war demonstrations in the present Balkan crisis. The equalization of rights to the land can be accomplished in but one of two ways: land nationalization with a universal leasehold tenure, or the reduction of all ground rents to public ownership through an annual tax on the value of all valuable lands, equal to the annual rental value of the land, exclusive of improvements.

Under either mode, the revenues of the government being derived from ground rents, all

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reason for tariffs (even tariffs for revenue), for internal revenue imposts, for octroi duties, poll taxes, for licenses, and for personal property taxes and taxes on improvements would disappear, and with them, the taxes themselves, and all the complicated governmental machinery for collecting them and for punishing violators of revenue laws. In these ways, governments, local, state and national, would in certain respects be enormously simplified. On the other hand the business of the government along the lines of transportation and the transmission of intelligence would be greatly extended. Government would be closely confined to the administration of the collective property—to the handling of those things which the law of equal freedom will not leave in the hands of private individuals.

Transportation would, no doubt, proceed along present lines, but with an emphasis on waterways at least equal to that on railways, through an era of great development. But with a realization of the fact that wise road-building would, by adding to land values, pay

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for itself in an immediate influx of revenues, the anticipation of a great demand for paved and macadamized roads would result in the increased use of motor-cars for both freight and passenger carriage, and, thus, perhaps, an eventual tendency of transportation back into private hands, and the use of railways and waterways for the heavy and through business only. Under such conditions, cities would spread over greater and greater areas, the slum would cease with the poverty and the pressure of rents which cause it, the flat and apartment-house would become a historic puzzle, every person desiring them would have his field and garden, and the country road would again become a great artery of traffic.

The restoration of the land to the people by institutions rendering it unprofitable for any person to hold a site except for the purpose of putting it to its highest use, would make it possible for people to try many experiments which they can not now attempt on account of the price of sites. Cooperative housekeeping, that greatest need of so many women, is one

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of the most obvious of these. The industrial crystal, its formation rendered possible by free land for factory sites and homes, would take the form of cooperative factories, probably incorporated, in which the shareholders would be the workmen. It seems probable that the corporation, now the oppressor of the common man, will become the favorite form of cooperative organization, permitting as it does, the easy transfer of memberships from hand to hand, and the additional advantage of well-understood duties and liabilities.

In no field, perhaps, would more radical changes take place than in agriculture. Tenant farming would cease absolutely. The tendency would no doubt be to production upon a large scale by voluntarily formed cooperative groups, the members living in villages and thus enjoying the intellectual life of the city. It is coming to be known that farming is a business founded upon one of the most abstruse of sciences—a whole system of sciences, in fact. The cooperative farming community would have its work divided into

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departments under skilled specialists in agronomy, animal husbandry and horticulture. One can get a glimpse of this sort of life at any of our great agricultural colleges. Under it production would be enormously increased, and the cooperative farm would vie with the cooperative factory in ushering in an era of plenty.

These suggestions are based upon the fact that man is a gregarious animal, and that the solitary life and the solitary mode of production is unnatural and forced, as well as upon the consideration that it is only by combination of laborers and division of labor that human effort is most productive. That things will turn out in large measure as sketched above can not, it seems to me, be doubted. But however that may be, under freedom attained as it must be by the exercise of the intellect, instinctive tendencies, intuitions resting upon bases deeper than reason can comprehend, must bring man at last to the status which is best for him, to the natural status of the cooperative animal, the right way of collective life. Jus-

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tice in the last analysis harms no one, and can be opposed to the true interests of no one. Even selfishness, enlightened selfishness, should impel every one to strive for universal justice, which is truth applied to human relations.

We need not discuss, therefore, or much care, whether institutions like the public bath, the government store, or the government factory or free transportation for persons and commodities will continue or come into being, in the better days to come. If democracy be a necessary part of the cosmic plan, then every man must become his own king; but we need not discuss the question as to whether this implies his becoming his own priest also. That liberty of every man which leaves every other man equally free, that freedom which Jesus says comes from knowing the truth, may be trusted as implicitly as we trust the truth of nature which appears in the instinct of the cooperating animals, in the wheeling into orderly ranks of the atoms which make the flaming jewel, in the harmony

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of the spinning spheres which encircle the sun, in the immeasurable sublimities of the revolving world of the stellar universe. All filth is but matter out of place. All evil is but perverted good. There is no vice which is not virtue turned awry. Once set free the units which make up this muddy world of ours, and when they have floated from their wallow of want and greed and mutual murder, all things must tend more and more to "move to the spherul rhythm of love."

If mankind could be made to believe these things, the very fact of such belief would make their attainment possible. Never before did the world face such perils as now, since Rome went staggering back from civilization into barbarism. The history of man shows him ever rising to surmount the obstacles of his own ignorance of collective life, and ever falling short in the attempt. He now stands before the old barrier, with the discouragements of many defeats weighing him down. He finds it hard to believe in his own destiny as containing aught of promise. The wise men

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have told him that vice, crime, war, pestilence, poverty and famine exist in the nature of things, that they are but human manifestations of the struggle for existence; and have found buttresses for this gospel of gloom in wage-fund theories, Malthusian theories, laws of diminishing returns and false readings of gospels. The dry exhorters of pseudo-religion have listened for the golden clink of coin falling into sacerdotal coffers from the mints wherein men's souls and women's souls and bodies are crushed into profits, and have silenced the questionings of their flocks and their own consciences by the blasphemous repetition of the text, "The poor ye have always with you," falling as it did from the lips of Him whose gospel was glad tidings, not to the rich, but the poor.

But now there seems to be a growing change in man's attitude. He comes to the old problem with new knowledge. To those who ask him to bear all burdens here that he may be blest in the next world, he answers, "One world at a time! I live in this world." To him

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who says that poverty comes from God's laws he answers that a demon might have created a world without provisions for its inhabitants, but a just God, never. To every argument adduced from nineteenth century science to prove the inevitableness of these injustices, he brings arguments more scientific for universal peace and plenty. And back of all glimpse the fair vistas of a society which has passed all its dangers by, in which, man's struggles with man being over, he addresses all his efforts to the struggle with nature, an ennobling contest in which all things, the attractions and repulsions of atoms, the turning of the sphere, the stars in their courses, shall be in harmony with him and he with them.

THE END

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